AUG 1 1920

The

British Medical Journal

The Journal of the British Medical Association.

INCLUDING AN EPITOME OF CURRENT MEDICAL LITERATURE.

WITH SUPPLEMENT.

No. 3107. SATURDAY, JULY 17, 1920. **Price 1/-**

The SURGERY of the HEART.

By Sir CHARLES A BALLANCE, K.C.M.G., C.B., M.V.O., M.S., F.R.C.S., Consulting Surgeon to St. Thomas's Hospital, etc. Illustrated by 48 figures. Demy 8 vo. 10/6 net.

MACMILLAN & Co.

By A. C. MAGIAN, M.D.,

Surgeon to the Manchester French Hospital and to the Wood Clinic for Genito-Urinary Diseases.

MANUAL OF VENEREAL DISEASES.

2ND EDITION. With 61 Illustrations. 10s. 6d. net.

This manual has been written specially for the general practitioner, and gives complete practical details for the most modern treatment of Syphilis and Gonorrhœa.

London: WM. HEINEMANN (Medical Books), Ltd.

By Sir ARBUTHNOT LANE, Bart., M.S.

OPERATIVE TREATMENT OF FRACTURES.

SECOND EDITION, with 266 Illustrations, 10/-.

ADLARD & SON & WEST NEWMAN, Ltd., 23, Bartholomew Close, E.C. 1.

CLEFT PALATE AND HARE-LIP

With additional Chapters by CORTLANDT MACMAHON and Mr. WARWICK JAMES.

THIRD EDITION, with 58 Illustrations, 10/-.

ADLARD & SON & WEST NEWMAN, Ltd., 23, Bartholomew Close, E.C. 1.

BOOKS BY

P. LOCKHART MUMMERY, F.R.C.S.

DISEASES OF THE RECTUM AND ANUS AND DISEASES OF THE COLON.

BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, Covent Garden, W.C. 2.

NEW EDITION, THOROUGHLY REVISED.

THE ESSENTIALS OF HISTOLOGY:

Descriptive and Practical.

For the Use of Students.

By Sir EDWARD SHARPEY SCHAFER, LL.D., D.Sc., M.D., F.R.S., Professor of Physiology and Histology in Edinburgh University.

With many Illustrations, several of which are Coloured. ELEVENTH EDITION. 8vo. 14s. net.

LONGMANS, GREEN & Co., 39, Paternoster Row, London, E.C. 4.

OXFORD MEDICAL PUBLICATIONS

NOW READY.

COMMON INFECTIONS OF THE KIDNEYS.

With the Colon Bacillus and Allied Bacteria.

By FRANK KIDD, M.B., B.C.(Cantab.), F.R.C.S.Eng., Surgeon to London Hospital; Surgeon in Charge of Genito-Urinary Department, London Hospital; Member of the International Society of Urology.

With an additional Chapter on the BACTERIOLOGY OF THE URINE, by Dr. PHILIP PANTON, Clinical Pathologist, London Hospital.

Demy 8vo. Cloth. 336 pages. Illustrated in Colour and Black and White. Price 18/- net.

INFECTIOUS DISEASES:

A Practical Text-Book.

By CLAUDE BUCHANAN KER, M.D., F.R.C.P.Edin., Medical Superintendent, City Hospital, Edinburgh; and Lecturer on Infectious Diseases to the University of Edinburgh.

Second Edition. Crown 4to. Cloth. Pp. 640. Illustrated by 68 Charts and 32 Plates, 12 of which are in Colour. Price £2 2s. net.

HENRY FROWDE AND HODDER & STOUGHTON, 17, Warwick Sq., Newgate Street, London, E.C. 4.

By H. WANSEY BAYLY, M.C.

VENEREAL DISEASE: ITS PREVENTION, SYMPTOMS & TREATMENT

JUST PUBLISHED.

Pp. viii × 152. 54 Illustrations. Price 10/6.

J. & A. CHURCHILL, London.

CLINICAL PATHOLOGY OF SYPHILIS AND PARASYPHILIS.

Pp. xiv × 194. 23 Illustrations. Price 5/-.

BAILLIÈRE, TINDALL & COX, London.

By FREDERICK W. PRICE, M.D., F.R.S.(Edin.), Physician to the Great Northern Central Hospital. Physician to the National Hospital for Diseases of the Heart, London.

DISEASES OF THE HEART.

Their Diagnosis, Prognosis, and Treatment by Modern Methods.

With a Chapter on the Electro-Cardiograph.

Demy 8vo, 484 pp. Very fully Illustrated. 21s. net.

Lancet.—"By great care, and by the use of an amazing amount of material, he has accomplished what many readers have been waiting for, giving us a complete account of the diagnosis, prognosis, and treatment of heart diseases by modern methods in association with all the invaluable teaching bequeathed to us by the older masters of clinical observation."

British Medical Journal.—"The book presents a comprehensive account of modern knowledge of cardiology."

Edinburgh Medical Journal.—"Taken as a whole the book is, from the practitioner's standpoint, one of the best of the many monographs on the heart that has appeared in recent years."

Dublin Medical Journal.—"It is probably destined to take the place in the library of the present day physician that was occupied some twenty or more years ago by Sir W. Broadbent's well-known work."

Midland Medical Review.—"It is impossible to enumerate the many excellencies of this book."

London: HENRY FROWDE AND HODDER & STOUGHTON.

JUST PUBLISHED. Price 10s. 6d. net.

ORTHOPÆDICS for PRACTITIONERS

An Introduction to the Practical Treatment of the Commoner Deformities.

By PAUL BERNARD ROTH, M.B., Ch.B.(Aberd.), F.R.C.S.(Eng.), Senior Surgeon, and with charge of Orthopædic Cases, Kensington General Hospital, etc. London:

EDWARD ARNOLD, 41 & 43, Maddox Street, W. 1.

THIRD EDITION. Pp. viii + 92, with 4 Plates. Price 4s. 6d. net. (postage 4d.).

THE INTENSIVE TREATMENT OF SYPHILIS

and Locomotor Ataxia by Aachen Methods.

By REGINALD HAYES, M.R.C.S.

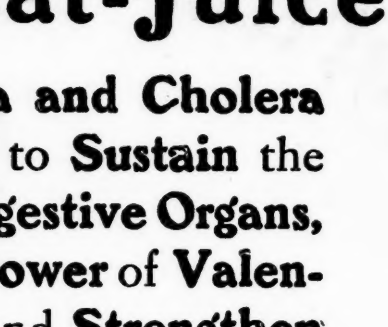
BAILLIÈRE, TINDALL & COX, 8, Henrietta Street, London, W.C. 2.

REGISTERED AS A NEWSPAPER.] [COPYRIGHT] [ISSUED WEEKLY

Valentine's Meat-Juice

In **Typhoid Fever, Diarrhoea and Cholera Infantum,** when it is **Essential** to **Sustain** the patient **without irritating** the **Digestive Organs,** the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Restore** and **Strengthen** has been demonstrated in Hospital and Private Practice.

THE quickness and power with which VALENTINE'S MEAT-JUICE acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.


VALENTINE'S
PREPARATION
NUTRIO PERFECT
MEAT JUICE.
DIRECTIONS-Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or warm water. The use of boiling water changes the character of the preparation.

Physicians are invited to send for brochures containing clinical reports.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
Richmond, Virginia, U. S. A.

B 280

THE SCOPE AND EQUIPMENT OF AN ANATOMICAL INSTITUTE:

THE PROPOSED INSTITUTE OF ANATOMY AT UNIVERSITY COLLEGE, LONDON.

BY G. ELLIOT SMITH, M.D., F.R.S.,
PROFESSOR OF ANATOMY IN THE COLLEGE.

I CAN best explain the aims of the new Institute of Anatomy which it is proposed to build at University College by referring to certain phases of the history of anatomy during the last eighty years or so.

The impression seems to have got abroad that the unprecedented gift of the Rockefeller Foundation to University College Hospital Medical School and to University College was a matter of pure chance. But it was the result of a deliberate choice made by a body of trustees which, from the nature of its activities, has a fuller and more intimate acquaintance with the state of medical education and research throughout the world than any other single authority. It is necessary to emphasize this in order to appreciate how and why this great gift came to be made and the programme of reform it was intended to help.

The Rockefeller Foundation was eager to give some striking expression of American friendship to the British Empire; it was also anxious to enlist the help of British medical men in its great world-wide schemes of stamping out such diseases as ankylostomiasis, for efforts restricted to a few localities are not likely to effect any radical purpose in preventive medicine; it also realized that unless the standard of medical education was raised throughout the world and the true spirit of research more fully developed, its great programme was foredoomed to failure.

At the end of last year two representatives of the Rockefeller Foundation, Dr. Wickliff Rose (General Director of the International Health Board) and Dr. Richard M. Pearce (Adviser in Medical Education to the Foundation), were in London on their way to Belgium to report on some educational problems in that country. They visited University College, and were informed by Professor Bayliss of the new developments in medical education which had taken place in London, and that several of the hospitals had started the system of clinical units. The fact that some of the London hospitals had adopted this plan excited the lively interest of the two representatives, as the Rockefeller Foundation had played a large part in the encouragement and endowment of this system of medical education in America.

The Rockefeller Foundation, founded by Mr. Rockefeller, has for its object "the promotion of the well-being of mankind throughout the world." Its interests are truly world-wide, and at the present time it is engaged, among other enterprises, in work in a campaign against tuberculosis in France; the control of malaria in the Southern States of America; the control of hookworm disease in twenty-one foreign states and countries, and in twelve states of America; in the improvement of public health organizations in Brazil and Australia, and in the setting up and equipment of a large medical centre in Peking. It is also playing a very large and important part in the promotion of medical education, and more especially of medical research, in the United States.

The two representatives of the Foundation visited the various schools in London which had set up the unit system, and came to the conclusion, after a critical review of the situation, that of these hospital schools the one that had adopted the whole-time system in the most whole-hearted way was University College Hospital. At the same time they recognized fully our difficulties, and appreciated very clearly that if the units were to make good, it was necessary that they should be supplied with a larger number of beds for the use of the Directors, larger and well equipped laboratories in the hospital for clinical and research work, and more liberal financial support. They felt that the whole scheme was one which would appeal to the Rockefeller Board of Trustees, and one to which they might well recommend the Foundation to give its financial assistance so that the unit system of clinical teaching might receive every possible chance of attaining the fullest success. Their hope was that assistance from the Rockefeller Foundation might relieve the units from all embarrassments, and secure for this school a completely equipped staff of whole-time teachers in all subjects from the earliest to the final years.

University College is the training ground in pre-clinical subjects for the majority of the students who later enter the hospital school, and it was therefore necessary to ensure that any improvements needed by the medical faculty of the College should be realized coincidentally with the changes in the school of the hospital. In pursuance of this policy the Rockefeller representatives visited University College and investigated the facilities available there for the training of medical students in the preliminary and intermediate studies. With the former they were well satisfied, with the latter they found little wanting in the institutes of physiology and pharmacology, but they found an entire absence of any adequate provision for the work in anatomy. The need for a new Institute of Anatomy worthy of the College had long been recognized by the College Committee, who realized that they must, in the near future, provide a properly equipped institute for real teaching and research work, and indeed, they had already set aside a site for the building, but so far had not raised any of the funds.

Apart from the fact that Dr. T. R. Elliott's scheme for the reform of clinical education in the medical school, and Professor Starling's great achievement in building up the Institute of Physiology in the College were the solid reasons for the choice made by the Rockefeller Foundation, it is singularly appropriate that the attempt to institute radical reforms in the teaching of anatomy and in the provision of the facilities for real research should be made in University College. For, paradoxical though it may appear, the reforming zeal of Sharpey seventy years ago had as one of its ultimate results the crippling of anatomical effort in this country, and it is proper that the College which created a physiology so vigorous as to seize the more vital and progressive parts of anatomy should be the institution to right this ancient wrong by restoring to anatomy the opportunities for teaching and research in histology and practical embryology, and for the experimental study of the factors that influence growth and development.

It is important to remember that Sharpey succeeded Jones Quain, the author of *Quain's Anatomy*, in the chair of anatomy and physiology at a time when physiology was a mere appendage of anatomy. He developed the practical teaching of physiology, and was the first in this country to give really comprehensive courses of instruction in physiology and minute anatomy. The fact that he was Professor of Anatomy afforded him the opportunity of devoting his attention to the really interesting parts of anatomy, leaving Richard Quain only the dead corpse of macroscopic anatomy. And when Sharpey's disciples, Michael Foster and Burdon Sanderson, went from University College as physiologists to spread the new gospel in Cambridge and Oxford, they followed their master's example and annexed to physiology the most vital and progressive branches of anatomy. As England did not produce any anatomists of the calibre of Sharpey, Foster, Sanderson, and their brilliant followers to resist this unnatural divorce of microscopic from macroscopic anatomy, this arrangement, which has worked such grievous harm to anatomy, became stereotyped and expressed in bricks and mortar, so that the anatomist has had no laboratories in which to teach histology even if he had the wish to do so.

The great advances that have been made in anatomy during the last thirty years have been effected mainly by the use of the microscope. Yet microscopic anatomy, without which macroscopic structure is not really intelligible, has been taught by the physiologist; and in many departments of anatomy there is no provision of any sort even for demonstrating microscopic preparations, much less for the study of minute structure by the students. Although in every department of anatomy some pretence is made of teaching embryology, in no school is adequate provision—in most there is none at all—made for practical instruction.

It is a fundamental vice of any system of education in science merely to give the student the *results* of other people's work and not to give him the opportunity of observing the facts himself by studying the material upon which our knowledge is based. It is essential that adequate facilities should be provided in every department of anatomy for the student to study the minute structure of

the body and the facts of development, and that rooms and equipment should be set apart for research in these subjects. It is important to emphasize the fact that it is not a question of depriving the physiologist of anything he has or wants to keep. At University College the reform has been facilitated by Professor Starling's offer to give up to the anatomist the subject of microscopic anatomy. But every teacher should be free to teach his subject—or, as I should prefer to express it, to provide his students with the facilities for studying—in the way that he thinks fit. Histology is vitally important in the real study of anatomy; but if the physiologist wants to use a microscope to demonstrate physiological facts there is surely no reason why he should not continue to do so when the anatomist comes into his own and recovers the lost members of his subject.

The structure of the nervous system, gross and fine, its developmental history and the connexions displayed by degeneration and experiment, are all subjects which should be studied as one connected whole in the department of anatomy; and if the complexities of the nervous system are to have any meaning or make any intelligent impression upon the student, the functional significance of the arrangements must be discussed and the effects of damage to the nervous system must be used, not to pretend to teach the student clinical medicine, but to give him some satisfying explanation of a complex and otherwise unintelligible mechanism. It is necessary, then, in any properly equipped institute of anatomy, to provide a neurological department fully equipped with sets of slides of adult human and embryonic material and of the brains of other vertebrates, and with laboratories for the experimental study of the results of degeneration.

In making these claims I am not setting up an extravagant demand, but am simply stating what is done in properly equipped medical schools in other countries and what I have been striving to do in this country and elsewhere for a number of years.

In most of the progressive medical schools of America great activity is being displayed (in the anatomical departments) in experimental investigations of the factors which influence growth and development and of the causation of anomalies and monstrosities. Such researches have led to results of enormous importance from the insight they afford into the underlying principles of development as well as in explaining the causation of pathological conditions. The equipment of laboratories for such experimental work is an essential part of the scheme for the new Institute.

It is gradually being realized how great and important is the knowledge of the structure of the living body that can be acquired by the use of the *x* rays. At present a student is called upon to interpret radiograms long after he has left the department of anatomy, and when his practical familiarity with the arrangement of the structures he is endeavouring to disentangle has grown dim. Obviously the proper time to acquire an understanding of *x* ray appearances is when the student is actually studying the things of which the *x* rays cast shadows. But such studies also teach him his anatomy, and are a valuable means of instruction. Moreover, the equipment of a department of radiology in the Institute opens up a most promising field of anatomical research, which is bound to become increasingly fruitful year by year as the technique of radiography is improved.

The vast importance and urgency of such reforms as I have outlined are revealed most strikingly if one compares the history of British and American achievement in anatomy during the last thirty years. On the one side inertia and retrogression—on the other an unprecedented development of teaching and research, a broad outlook and tremendous vitality. The great reform of anatomy in America began in the Johns Hopkins medical school in 1893, when the late Professor Franklin Mall set up a department of anatomy which, in defiance of recent British and American tradition, aimed at educating the student and teaching him to observe, rather than providing him, in innumerable lectures and demonstrations, with the conventions that examiners may expect him to reproduce. Mall's influence in rescuing anatomy from the scholastic method soon spread to other subjects of the medical curriculum and to other medical schools in America; and the vast reform of medical education and research in America is in large measure the result of his pioneer work in the anatomy department at Baltimore from 1893 onward. It has been the great incentive of the Rockefeller Foundation's schemes of medical work from which we are now about to benefit.

Realizing where and how this great movement began, the appropriateness of the selection of University College for the Rockefeller Gift is suggested by the circumstance that it was a former student of University College who played a not inconsiderable part in preparing the ground and in developing the proper atmosphere at the Johns Hopkins University for the great developments to which I have referred. From 1876 until the coming of Franklin Mall in 1893 Henry Newell Martin, who had been a student of University College with Michael Foster and afterwards his right-hand man at Cambridge, filled the Chair of Biology at Baltimore and exerted so significant an influence that when Dr. William Welch and Dr. William Osler were brought to the Johns Hopkins University, twelve years after Martin had begun to create a school of biology and physiology there, they found the conditions ripe for the building up of the great medical school which will always be associated with their names. Thus University College can regard the Rockefeller Gift as the repayment, no doubt with considerable interest, of the debt biological and medical education in America owes to Newell Martin and University College.

If the facilities for research and education which the erection of the new Institute will afford result in even a fraction of the effects produced by a similar development in America twenty-seven years ago, it will amply justify the expenditure of labour and time which these new developments will entail. For the fuller understanding of the meaning of the body and the factors that influence its growth and development must be the foundation of the newer science of medicine of the future—the prevention of disease. If America has had a start of a quarter of a century in instituting these vital reforms, which affect not anatomy only but the whole of medical education, we can profit from her experience both by adopting many ideas that have been tested and found good and rejecting others that have failed or are not suited to our circumstances. It is hoped to build up here an Institute that will afford students and investigators the means to obtain a broad outlook on the problems and a thoroughly practical knowledge and understanding of human structure, and be a powerful instrument for the advancement of knowledge.

For the opportunity of attempting this great reform it is difficult adequately to express our gratitude to the Rockefeller Foundation for its enlightened generosity.

AN OPERATION FOR THE RADICAL CURE OF INGUINAL AND FEMORAL HERNIA.

BY

SIR G. LENTHAL CHEATLE, K.C.B., F.R.C.S.,

SURGEON TO KING'S COLLEGE HOSPITAL, LONDON.

FROM the experience gained in operating recently upon eight cases for the radical cure of inguinal hernia at King's College Hospital the following operation has been evolved.

The patient is placed in the Trendelenburg position, an incision is made to one side of the middle line, the rectus abdominis is split longitudinally, and the abdominal wall is retracted to the side of the operation. The peritoneum is smoothed away by a dry swab from the parietes. The operation is conducted without opening the peritoneum. The sac between the internal ring and the surface of the peritoneum is delimited by insinuating the forefinger between it and the external iliac artery and vein. The sac is ligatured at the peritoneal surface. The part of the sac that extends into the inguinal canal is pulled up into the subperitoneal space as far as it will come, tied as low down as possible and then it is allowed to slip back (or is replaced) into the inguinal canal; so that it cannot act as a guide for a recurrent hernia.

The delimitation of the sac in the subperitoneal space is simplified by packing back the peritoneum with gauze in a direction upward and away from the seat of operation. The muscle fibres and their sheath are separately sutured. There is nothing to stop a surgeon occluding the internal ring by suture should he desire. The deep epigastric artery and vein could be retracted inwards to allow occlusion of the ring. The younger the patient the greater is the simplicity of the operation. The abdominal

wall in young people is so easily retracted to the side of the operation.

In one patient the top of the urinary bladder entered the canal and was firmly incorporated with the neck of the sac. This is a complication not uncommonly met with, and makes radical treatment of the neck of the sac difficult and inefficient when the operation is performed by the ordinary method. By the method I have described the bladder was placed easily and efficiently in its normal position, and the peritoneal opening of the sac was closed at the peritoneal surface. The appearance of the parts in this patient suggested a congenital malformation in the relation between bladder and peritoneum in this region. In one patient suffering from a femoral hernia I performed practically the same operation. It was easy of accomplishment. I turned up a square inch of periosteum from the underlying pubes and attached it to the under surface of Poupart's ligament and the outer margin of Gimbernat's ligament.

The operation would not be so applicable to inguinal hernia in which intestinal adhesions existed within the sac. So far, I have operated on selected cases.

The operation is conservative. I have made no allusion to its performance by other surgeons because I can find no records. I hope I have not overlooked any record of this kind.

OPEN ETHER, WITHOUT CHILL.

BY

LIONEL JAS. PICTON, O.B.E., M.B.OXON.,

HOLMES CHAPEL, CHESHIRE.

THE advocates of warm ether have shown that the best temperature for the vapour is about body heat. If a thermometer be placed in the wool face-piece of an ordinary open-ether mask, with the bulb projecting over the patient's mouth, it will be found to rise to about 98° or higher, according to the patient's temperature. That, of course, is the maximum, and will occur on expiration; the minimum will occur when the intake of the patient's breath draws air through the half-frozen lint. If this inspiration temperature could be avoided, and something approaching the expiration temperature maintained, the administration of open ether would be freed from one of its chief objections. With this object, I tried a mask with a double dome of gauze, and intervening cavity in which the cold vapour and warm expired air would mix. The patients seemed less to resent the induction of anaesthesia than with the ordinary single dome.

Further experimentation, with the help of Mr. Harold Behrens, resulted in a metal chimney, about 8 in. high, built upon an ordinary mask. The open top of the chimney, 4 in. in diameter, was closed with a "drum" of gauze (two thicknesses of the material as it unrolls from the packet, or, for a robust patient, three thicknesses) clamped by a ring. This is kept just saturated with ether. The chimney narrows in the middle to a "waist" 2½ in. in diameter; and here is another "drum" of gauze, a single layer only, clamped between the upper and lower halves of the chimney. A third layer of gauze, also single, forms a dome in the lowest part of the chimney. Between the top "drum" and the "waist" the vapour is cold, as is indicated by condensation of moisture on the outside of the chimney. But the lower half of the chimney is free from condensation, and comfortably warm to handle, for the vapour within it is automatically warmed by its admixture with expired air.

In actual use anaesthesia is very smoothly induced and maintained with this mask; and I think that ill effects of ether—salivation, bronchial secretion, liability to pulmonary disorders—are reduced. (The aid of atropine is assumed.)

A small point in favour of the method is that the ether is kept from contact with the face. A more important advantage of this apparatus is that it induces deep breathing; the percentage of CO_2 in the chimney ensures that; but no cyanosis occurs, and there is less of the suffocating sensation caused by the gauze drums than by the ordinary lint mask. The sustained, deep, quiet breathing, noticeable when this mask is used, must be valuable as a cardiac auxiliary; and, by aspirating blood from the abdomen into the great veins in the thorax, must help to prevent shock.

The mask can be obtained from Messrs. Browne and Sayer, 30, Highbury Place, London, N.5.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association

Held at Cambridge, June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF PHYSIOLOGY AND PHARMACOLOGY.

Professor F. GOWLAND HOPKINS, F.R.S., D.Sc., F.R.C.P., President.

DISCUSSION ON ACIDOSIS IN DISEASE.

OPENING PAPERS.

I.—Professor F. GOWLAND HOPKINS, M.B., D.Sc., F.R.S.

OUR discussion, if its scope is to correspond with what is indicated by its official title, will deal with two related but sufficiently different sets of phenomena. We are faced, indeed, at the outset with some questions of nomenclature.

As a result of historical developments the term "acidosis" has come to have at least two meanings, and as consistency in nomenclature is a matter of real moment it would be satisfactory if discussion to-day could secure as one of its results the final removal of any ambiguity in the use of the term. This outcome would add to the comfort of those who think and write about such matters and prevent confusion of thought among others less well informed.

The first use of the term "acidosis" is usually ascribed to Naunyn, though I think it was in use for a year or two before, in 1906, he applied it to that condition of arrest in metabolism which leads to the circulation and excretion of hydroxy-butyric and diacetic acids. The use of the term in Naunyn's sense became well established, and, in clinical writings at least, it is frequently so used to-day. Such is the nature of the word, however, that it is not surprising that it should have become gradually applied to other conditions in which increased production in the body of acid substances of any sort is suspected. Finally, we find it applied to all conditions in which the acid-base equilibrium of the blood is upset in the sense of a diminished reserve of available base.

While the appearance in the blood of the special acids just mentioned does, under conditions, seriously alter the acid-base equilibrium, the disorder in metabolism which produces them may exist without leading to any significant disturbance in this sense. Van Slyke and Cullen state, for instance, that they have observed the excretion of 20 grams of acetone bodies (calculated as hydroxy-butyric acid) per litre of urine without the coincidence of an abnormally low plasma bicarbonate. It is clearly undesirable therefore that the same word should cover states of the body which may in effect be very different.

Every one, I think, will agree that, logically, the term "acidosis" should be confined to conditions which involve changes in the reaction of the blood, and since "acidity" in the older sense of the word is so rarely, if ever, established, we shall do well, in my opinion, to accept—as so many authors have now accepted—the definition of acidosis as a condition in which, even though the actual hydrogen-ion concentration (the "reaction") of the blood is little altered, or unaltered, there is a diminution in its potential neutralizing power, a lessening of its "reactivity." We may do well to go somewhat further and speak of "uncompensated acidosis" (Hasselbalch and Gammeltoft) when there is actual increase in the hydrogen-ion concentration C_H and of "compensated acidosis" (Van Slyke) when there is none.

Although it needs an actual change in the C_H of the body fluids to produce an immediate result of any sort, it is, I think, quite wrong to speak of a depletion of the alkali reserve (unless it be a wholly temporary phenomenon) as though it were of no importance. It affects potentialities. An individual displaying diminished alkali reserve is not in a position of equal safety with one in whom the reserve is normal. The former, unlike the latter, may, for instance, become perceptibly dyspnoeic on slight exertion, and he will become more intensely

dyspnoeic than the latter with a given increase of exertion. As a mere result of mass action the blood with diminished base can less immediately deal with any sudden increase of acid production in the tissues.

Although, therefore, it may not be wholly logical to speak of "acidosis" when there is, as a matter of fact, no "acidity," there is, I think, justification enough for the suggested use of the term. We shall have to consider later whether under special conditions we ought, on the other hand, to speak sometimes of alkalosis.

For conditions in which the essential element is the circulation of the acetone substances, I can think of no better label than that of ketosis, as proposed by Allen. Chemically the term is more or less justifiable, and it has, at any rate, no undesirable connotations. When using the term "ketosis" we should be thinking especially of a particular metabolic anomaly, which may, or may not, involve "acidosis." When using the latter term we should have in mind a change in physico-chemical equilibrium which may indeed be due to metabolic errors, but may, on the other hand, depend upon something quite different. Ketosis and acidosis may coexist, but the important point is that the association is not necessary.

I trust that this matter of nomenclature may not be thought trivial, and wish that our discussion may settle it. To-day, however, we may expect, and indeed hope, to hear a discussion concerning all conditions that have hitherto borne the name of acidosis.

Acidosis proper, as just defined, has lately been the subject of much intensive experimental work and of important clinical studies, stimulated in particular by the painful results of gas warfare. The suggestion has reached me that in opening the discussion I should attempt a summary of the present position of the subject for the benefit of those who have not given special attention to it. It is clear that in such an attempt one must be very brief, and unhappily it will be impossible to give proper credit to individual workers. Much of the progress made has arisen from work done in this country, and one is glad to think on the present occasion that the older universities have taken the lead. Haldane with his co-workers at Oxford, and Barcroft and his colleagues at Cambridge, stand pre-eminent among those who have directed thought on these matters. The work and writings of Bayliss and Benjamin Moore must certainly not be forgotten, and in addition to these names, those of Hasselbalch in Copenhagen, and D. D. Van Slyke in America, call for particular mention; but others have helped in the advance.

The progress has been real, though, to say the truth, some recent advances on the scientific side consist rather in increased precision of statement, made possible by the progress of physical chemistry as a quantitative science, than in the acquisition of fresh fundamental knowledge. Improvements in technique, however, have been remarkable. Moreover, the greater precision in thought and statement has itself brought out new relations, offered new suggestions, and has even led to new controversies. One hopes that in the discussion to-day the controversial points may receive full attention.

Of the many factors concerned in the extraordinarily nice adjustment of the reaction of the blood and in the continued maintenance of its exact normal value, the effect of "buffers" comes first. Buffers are compounds of such type that when (say) a strong acid reacts with them stochiometrically it is replaced by an acid less fully ionized. Thus though the "acid" in the system increases in proportion to any addition, the "acidity" increases to an extent which may be relatively very small. When free acids, derived from metabolism or otherwise, enter the blood, a coarse adjustment making for neutrality occurs immediately with the rapidity characteristic of ionic reactions. This is buffer action. Fine adjustment is otherwise secured. Since the chief buffer in plasma is bicarbonate, the acid of low ionization is in this case carbonic acid, capable of immediate elimination by the lungs. Not only is any strong acid buffered upon entering the blood, but its "weak" representative is also quickly removed, and the removal moreover is automatically secured because the respiratory centre is stimulated to increased activity by the minutest increase in its concentration. But the rhythm of normal respiration would show wider variations than it does were not the functions of the lungs in maintaining a normal blood reaction seconded by those of the kidneys. The renal mechanism is highly sensitive to the existence of an abnormal base-acid equilibrium in the blood, and it excretes very promptly any excess of hydrogen or hydroxyl ions. Behind all this organization for preserving normality of reaction stands yet another safety mechanism. Metabolism can be rapidly modified so as to provide ammonia for the neutralization of acid, while, to judge from quite recent work, another modification may provide acid for the neutralization of base (J. J. R. McLeod).

I have said that the chief buffer in the blood is bicarbonate. Some believe that, so far as the plasma (not the whole blood) is concerned, it is the sole buffer of importance; but controversy, and that by no means wholly academic, is still acute with respect to the relative share, if any, that the plasma proteins take in acid-base equilibrium. I have my own opinion on this point, but I will leave it for discussion by those who have directly investigated it. I will just remark that if the proteins function in this way, they must form compounds with acids and bases which are capable of ionization. It is rather startling to find that Professor Cushny, as a result of studying the effect of passing serum through a colloid membrane, has just denied that ion-protein compounds exist in the blood. There seems so much evidence of a contrary kind that one feels discussion on the point would be valuable.

Whatever may be true of the plasma proteins, we have to admit, when the whole blood is considered, that the very wonderful substance haemoglobin exerts an influence of no small importance in the play of base and acid. It acts as a buffer with an efficiency which the plasma proteins certainly do not possess, and it promotes the decomposition of bicarbonates when they are exposed to diminishing tensions of carbonic acid. Very important is the fact that oxyhaemoglobin is a stronger acid than reduced haemoglobin, a circumstance that assists the elimination of CO_2 in the lungs and aids no less the fixation of the CO_2 in the blood as it traverses the tissues. Equally significant is another property of haemoglobin related to that just mentioned. It yields up its oxygen with increasing readiness as tensions of CO_2 increase, another advantage to the tissues.

But haemoglobin circulates in the corpuscles, and in the existence of the corpuscles we have another factor of importance in the phenomena which concern us. The whole blood is a system with two "phases." Across the interface, between corpuscles and plasma, ionic interchanges occur. If the hydrogen-ion concentration of the plasma tends for any reason to rise, then negative ions enter the corpuscles and positive ions enter the plasma, an interchange which checks rising acidity in the latter. In the whole blood we have not only a chemical buffer system (the buffer salts), but, in addition, a physical or mechanical buffer system (a buffer phase) supplied by the corpuscles. When we speak of the reaction of the blood we refer, it is true, more particularly to the reaction of its plasma. It is this which immediately affects the tissues. So long, indeed, as there is equilibrium in the blood the influence of the corpuscles need not be considered. It is when a *change* of conditions occurs that the corpuscles play their important part in determining the new equilibrium condition.

In spite, however, of various qualifying considerations, it remains true that the bicarbonate content of the blood plasma is a physiological factor of prime importance. One relation calls for great emphasis. The fraction $\frac{H_2CO_3}{NaHCO_3}$ —that is the ratio which free carbonic acid bears to fixed carbonic acid—gives a direct measure of the hydrogen-ion concentration in the plasma at any moment. For those not completely familiar with the subject of our discussion, it will be a great help to keep that fraction in mind. If the numerator, that is the proportion of free carbonic acid, grows less without change in the denominator, then the hydrogen-ion concentration grows less, and conversely. If the denominator, that is the proportion of fixed carbonic acid, grows less without change in the numerator, then the hydrogen-ion concentration increases, and conversely. A determination of its alveolar tension gives us a measure of the free carbonic acid in the blood and the amount fixed as bicarbonate can be determined in various ways. When the alveolar tension is known, we may determine the fixed carbonic acid in blood or plasma while it is exposed to that particular tension. Thus knowing both the numerator and

the denominator of the above fraction we arrive directly at the hydrogen-ion concentration. We can measure, on the other hand, the actual reaction by indicators, or by the electrical method. We have again for determinations in the whole blood the extremely interesting method of Barcroft, which depends upon a property of haemoglobin already referred to. The use of this method led its author to what is, in a sense, a special definition of acidosis. Most observers seem to find a satisfactory agreement among these various methods of measurement, although there are, I think, some here prepared to discuss and criticize them.

To prepare the mind for considering the possible effects of disease upon the nice adjustments which secure a normal reaction in the blood, it is well to consider in turn each of the factors concerned.

(*a*) *The Salts.*—The buffer salts of the blood are not constant; their equilibrium is affected, for instance, by the diet. More permanent changes of an abnormal sort have been thought to take a share in the production of acidosis in disease. Such changes, it would seem, could only arise through some alteration in the normal "thresholds" for renal excretion. The point is one well worthy of discussion. When in anaemias the number of corpuscles is greatly reduced, this reduction may in itself, because of the relations I have dealt with, produce an appreciable effect on the reaction of the blood in the body (Parsons).

(*b*) *Respiration.*—It is clear that any interference with normal respiration must produce a profound effect.

Special interest seems to arise in connexion with the state of affairs produced by gas poisoning, when this has not greatly damaged the lungs, and by slight carbon monoxide poisoning. The condition in such cases involves, as Dr. Haldane has repeatedly pointed out, a mild grade of anoxaemia, and the symptoms, according to him, closely resemble those produced by high altitudes or by a reduction of oxygen pressure in experimental studies. Such cases are of illustrative importance because similar conditions probably exist, at some stage or another, in various diseases of the lungs which have as yet been less studied from this point of view. These cases, it seems, do not display much hyperpnoea during rest. They show, on the other hand, one very interesting phenomenon. The urine contains an excess of base, and ammonia formation seems to be reduced to a minimum. Now if we call to mind the ratio $\frac{H_2CO_3}{NaHCO_3}$, upon the conservation of which in the blood depends the maintenance of a normal reaction, it is easy to see that, if the numerator of the fraction be reduced by an undue removal of free carbonic acid, the proper ratio can be restored by a corresponding reduction in the denominator, and this would follow upon increased excretion of base by the kidneys. If the free carbonic acid were alone reduced there would exist a condition which may be fairly spoken of as "alkalosis." The ratio might, it is true, be corrected by the production of other acids in the tissues, and evidence is available to show that this may occur, but in the type of case under discussion the correction would seem to be arrived at by the excretion of base by the kidney. I find personally one point of difficulty in understanding the state of affairs as described by Dr. Haldane. In the case of himself and his colleagues, after exposure to very low tensions of oxygen, the change in the urine in the direction of alkalinity was so great that it would seem to be balancing a large depletion of carbonic acid, for which there was no evidence. The use of the term alkalosis in such conditions as those just described, as advocated by Dr. Haldane and Professor Moore, is doubtless in a sense justified. But it should be remembered that there is always a reduction in the alkaline reserve, a fact emphasized by the circumstance that in these conditions there is always dyspnoea on exertion. It seems to me therefore justifiable, as it is certainly convenient, to classify the cases under the head of acidosis. There may be said to exist, as Dr. Poulton has pointed out, two types of acidosis. Both may show reduction of alveolar tension of CO_2 and both suffer from reduction in the alkali reserve, but the one excretes an acid urine and the other an alkaline urine. The method of compensation is different. In every case when the relations between respiratory phenomena and blood reaction are under consideration, it is necessary to remember that the sensitivity of the respiratory centre to hydrogen-ion concentration may vary. Bayliss has shown that under the influence of morphine, for instance, the centre may become relatively so insensitive to CO_2 as to allow uncompensated acidosis to be established. A much slighter change may account for the fact that the alveolar CO_2 rises in sleep when there may be at the same time a slight fall in the alkali reserve (Leathes, Collip).

(*c*) *The Kidneys.*—Evidence that interference with the normal function of the kidneys may involve grave disturbance in the acid-base equilibrium of the blood is abundant, and I believe that acidosis of renal origin is a subject which would well repay discussion just now. My own reference to it must be brief.

That studies of the respiratory exchange ought to become almost a matter of routine in cardio-renal disease is sure. Any alteration in the alveolar CO_2 tension yields a datum in such cases which is undoubtedly valuable. It has been shown, one may note in passing, that a greatly increased sensitiveness on the part of the respiratory centre to an increase in the CO_2 of the inspired air is characteristic of some cases,[1] an indication probably of diminished alkali reserve.

But I propose to refer to two types of case only: first recalling to your memory the interesting studies of Lewis and Barcroft and their colleagues on a group of clinical cases exhibiting dyspnoea without cyanosis; and, second, quoting a case from the literature which illustrated how extreme may be the condition of acidosis in renal disease. In Lewis and Barcroft's cases the alveolar CO_2 was sometimes very low, indicating a marked reduction in the uncombined CO_2 of the blood; yet a study of the oxy-haemoglobin dissociation curves showed that, so far from "alkalosis" existing, there might be, as a matter of fact, uncompensated acidosis. Under the circumstances such a condition must be due either to the production of other acids in metabolism, or more subtle relations must exist, and, owing primarily to renal errors, the buffer-salt system is in some way inefficient. It is to be hoped that clinicians are on the look-out for cases of this sort, for their further study is desirable. My second reference is to a case described by Means and Rogers,[2] which while, I imagine, by no means unique, is worthy of quotation because it was so fully studied by scientific methods, and because, as I have said, it will serve to remind us that in renal disease the degree of acidosis may become extreme and its effects extraordinarily marked. The case was one of cystic kidneys. The alveolar carbonic acid was down to 0.9 per cent. (6.4 mm. Hg), and so extreme was the hyperpnoea that the pulmonary ventilation was ten times the normal. To judge from the "alkali tolerance" shown by the patient, the blood must have been greatly depleted of available base; 110 grams of bicarbonate given during a period of two days failed to make the urine alkaline. This condition, considering the state of the kidneys, is much more likely to have been reached by retention of acid than by hyperexcretion of base. There was, however, no hydroxy-butyric acid or acetic acid present. Such a case seems to me to be highly instructive when we are thinking of acid-base control as a whole. In connexion with nephritis there is evidence that the only factor concerned in maintaining the blood reaction not yet mentioned as affected by disease may also be rendered inefficient. In some kidney cases at least the protective metabolic production of ammonia fails.

It is clear that acidosis plays a large part in pathology. It is a pity, on the other hand, that it should often be called in to explain symptoms when there is no evidence for its existence. It is in too much danger of becoming merely fashionable. The only corrective for such fashions is the extended use of scientific methods in diagnosis.

I have left myself but little opportunity for introducing the subject of ketosis, though my own occupation makes me anxious that it should be discussed. The biochemist must certainly look to the pathologist, and especially, perhaps, to the clinician, for help in solving the problem of ketosis. From the chemical standpoint there is still no solution to the now long-posed riddle as to why the four-carbon acids fail to be oxidized when carbohydrates are absent or their metabolism arrested. The light is indeed no clearer when we seek to discover, on the other hand, why these substances sometimes appear when there is no glycosuria and when carbohydrate seems well utilized. There is clinical material in abundance, and I think the whole subject is one which well illustrates the need for that closer touch between the general practitioner and the laboratory for which I am to plead in another

Section. The practitioner beyond all doubt frequently meets ketosis, especially in children, but he does not always test the urine for diacetic acid, and, when he does, his observations too seldom become available for statistical or other lines of study.

Of late years it is true there have been praiseworthy attempts to classify cases of ketosis, especially in America, where chemical methods are applied more widely than they are in this country.

Children, it seems, often show a temporary form of the disorder which is of no serious import. Some gastro-intestinal disturbance occurs, with headache, and, perhaps, vomiting, while "acetone bodies" occur in the urine for a few days only, to pass away coincidently with the other symptoms. Another group of cases in children shows more serious symptoms. Here, however, there seems to be little danger to life so long as coincident acidosis is combated—so long, that is, as the urine can be kept alkaline.[3] But children, as is well known, sometimes display ketosis in an acute and fatal form, and not long ago a group of cases was brought together[4] which seems to represent a special type. It comprised infants at the time of weaning put upon a diet containing ample carbohydrate. The symptoms were acute and fatal, but as the food was retained, the cases were quite distinct from those of cyclic vomiting in which ketosis may be (but is probably not entirely) due to the carbohydrate starvation necessarily associated with the vomiting itself. Only by a careful classification of cases, accompanied by quantitative studies as well as qualitative tests, can we hope to get full light on the meaning of clinical ketosis. It is certainly very common in children as a secondary effect of obvious toxaemias. In a study, for instance, of more than three thousand cases of diphtheria and acute anginal affections it was found present in 65 per cent.[5] We know from experiment that the acetone precursors are formed in the liver, especially from certain amino-acids. It is probable (and at any rate easy to say) that, in these infective cases at least, and in post-operative conditions, ketosis follows upon a disturbance of the liver due to the action of toxins or poisons. But the pancreas has to be thought of. Exactly where, and exactly what, is the primary disturbance? I trust some of those who follow me will be able to throw some light on this most interesting problem.

REFERENCES.
[1] Peabody, *Arch. Int. Med.*, 1915, 16, 846. [2] *Amer. Journ. Med. Sci.*, 1917, 153, 420. [3] Smith, *Arch. Ped.*, 1917, 34, 7. [4] Abt, *Amer. Journ. Med. Sci.*, 1914, 97, 86. [5] Reiche, *Muench. med. Woch.*, 1915, 58, 2153.

II.—W. M. BAYLISS, M.A., D.Sc., F.R.S.,

Professor of General Physiology in University College, London.

THE name "acidosis" ought to mean increase of acidity; that is, of concentration in hydrogen ions. Unless the respiratory centre is extremely insensitive, this is only permitted to occur to a very small degree, because of the increase in pulmonary ventilation due to stimulation of the centre. A slight increase in acidity does not appear to be harmful, and any great increase means that the whole organism, including the respiratory centre, is so deranged as to be practically moribund. A decrease in bicarbonate content may be present without increased acidity, provided that the respiratory centre is normally sensitive. The existence of this decrease implies production of fixed acid in the tissues (probably lactic acid), and this is due to deficient oxygenation, usually owing to low blood pressure or defective blood volume.

On the whole, it appears that the results often stated to be due to acidosis are not thus to be explained. They are to be attributed to other pathological phenomena, of which decreased bicarbonate is only one, and a comparatively unimportant, manifestation. Diabetic coma is most probably due to acetone and its derivatives as such, not to the acid properties of some of them.

Similar remarks apply to the opposite state of "alkalosis"; neither of the two being of importance in itself in so far as it is possible for it to occur while the organism remains alive.

III.—H. H. DALE, M.D., C.B.E., F.R.S.,

Medical Research Council.

I ENDORSE the President's plea for a clearer definition and application of the nomenclature, and emphasize the desirability of the meeting arriving at some consensus of opinion on this point.

IV.—T. H. MILROY, M.D.,

Professor of Physiology, Queen's College, Belfast.

IT is well recognized that in the majority of conditions of acidosis the reaction of the blood is normal, although the alkali reserve is lowered. Such conditions have been referred to as cases of compensated acidosis, with the H_2CO_3 concentration falling proportionately to the decrease in $NaHCO_3$. A disturbance of this type is characteristic of most cases of ketonuria, where the alkali reserve has been lowered by the successful competition of the foreign acids, beta-oxybutyric and aceto-acetic, for the reserve alkali. The necessary accompaniment of the lowered bicarbonate concentration is a fall in the H_2CO_3 concentration in the blood, and thus in the alveolar air. The competition between carbonic acid and the foreign acids for the disposable base obeys a definite law, and the amount of the base secured by each acid will depend upon two things—the dissociation constants of the respective acids and their concentrations. If the simplest case be considered—namely, one equivalent of the base and one of each acid—then the distribution ratio will be equal to the square root of the quotient of the dissociation constants of the acids. Thus—

If x = fraction of the base neutralized by H_2CO_3
$1 - x$ = fraction of the base neutralized by β-oxybutyric acid

$$\text{Then } \frac{x}{1-x} = \sqrt{\frac{K\,(H_2CO_3)}{K\,(\beta\text{-oxybutyric acid})}} = \sqrt{\frac{3.04 \times 10^{-7}}{3.86 \times 10^{-5}}} = \frac{1}{11.2}$$

The theoretical and experimental investigation of the subject along the above-mentioned lines has led to interesting results, particularly with regard to the effects produced by the administration of bicarbonate and citrate in conditions of compensated acidosis.

V.—E. P. POULTON, M.D., F.R.C.P.,

Beit Memorial Research Fellow; Assistant Physician, Guy's Hospital.

1. *Measurement of Acidosis.*

THERE is an inherent fallacy in Van Slyke and Cullen's method of separating off the plasma from blood and then subjecting it to 40 mm. CO_2 and measuring the CO_2 content, because the value obtained varies with the CO_2 content of the specimen of blood used. The alkali reserve may be accurately measured by determining the CO_2 in whole blood at 40 mm., or the CO_2 in "true plasma" (that is, plasma separated from blood *after* equilibrium with CO_2 has been established) at the same pressure. The advantage of using "true plasma" is that the p_H of blood can be accurately calculated from it by Hasselbalch's formula:

$$p_H = p_{K_1} + \log \frac{\text{Combined } CO_2}{\text{Free } CO_2}$$

expressed as the p_H of blood at 40 mm. This value pro—a very simple matter. Hence the alkali reserve may be bably lies between 7.41 and 7.31 in health. Another measurement of interest is the p_H of arterial blood; this may be inferred in some cases by using blood at the alveolar CO_2 pressure. Recently Campbell and I have been measuring the CO_2 content and CO_2 tension of blood withdrawn from the radial artery, while Hunt has been investigating the respiration in the same cases.

2. *Results in Disease.*

There is general agreement that in uraemia with nitrogen retention and in severe diabetes, acidosis—that is, increase of fixed acid and lowering of CO_2—occurs. Mr. Ryffel and I demonstrated this in 1913 for uraemia, and I published a series of observations in cases of diabetes in 1915. Barcroft's method was used. Parsons, Campbell, and I have since confirmed this by direct p_H measurements and CO_2 estimations. We have also observed acidosis in one case of tubal nephritis and in two cases of polycythaemia with splenomegaly. I wish now to draw attention particularly to cases of cardiac dyspnoea. Lewis, Barcroft, and others found an acidosis in cases of so-called cardio-renal disease, and explained the hyperpnoea on this hypothesis. No acidosis was found in rheumatic heart disease. It is admitted now that it is unsafe to use the oxygen dissociation curve to measure acidity, and on examining a series of cases of these two types we have been unable to find acidosis present in practically any of them. On the other hand, there was a tendency which was very marked in one case for the arterial CO_2 tension to be high, and I think that probably the hyperpnoea in all these cases may be due to slowness

of the circulation causing accumulation of CO_2 in the venous blood, which results in excessive ventilation to get rid of it.

In certain cases of eczema and seborrhoeic dermatitis, as Dr. Barber and Dr. Semon have shown, the urine is highly acid and much sodium bicarbonate must be taken before neutralization of it occurs. Mr. Joffe at Guy's Hospital has found that there is no acidosis in the blood, and sodium bicarbonate, when taken by the mouth, causes the same increase in alkali reserve as it does in normal people. Hence the acidity must be due to a special excretion of acid by the kidney.

VI.—T. R. PARSONS, B.A., B.Sc.,
Cambridge.

IN the maintenance of the normal reaction of the tissues the reaction regulating mechanism of the blood plays a large part. In the normal organism this "buffer" action of the blood serves to prevent large changes in its reaction, even though the chief end product of normal metabolism—carbonic acid—is an acid of sufficient strength to produce very considerable changes of acidity in non-buffered solutions. The reaction changes in blood as its carbon dioxide tension is increased are much more gradual than those occurring in solutions of sodium bicarbonate, because as the carbon dioxide tension increases, an increased quantity of sodium bicarbonate is formed, and this opposes the ionization of the carbonic acid. The sodium necessary for the formation of this bicarbonate probably comes from the haemoglobin, which acts as a weak acid and exists as a sodium salt at low CO_2 tensions. Haemoglobin, therefore, has functions in the carriage of carbon dioxide and in the maintenance of the normal reaction of the blood as important as those connected with the transport of oxygen.

DISCUSSION.

Dr. P. J. CAMMIDGE (London) agreed that there was need for an exact definition of the term acidosis, and hoped that a conclusion which would be generally accepted might be reached. He was of opinion, however, that care should be taken in defining both acidosis and ketosis to allow of further developments in our knowledge coming within the orbit of the definitions arrived at. He was particularly anxious on this account, as experiments he had been carrying out suggested that the state of the liver played an important part in ketosis and certain forms of acidosis, and it seemed not unlikely that a common denominator for certain conditions of this type might eventually be found in the liver.

Dr. R. L. MACKENZIE WALLIS (St. Bartholomew's Hospital) considered the division of acidosis into compensated and uncompensated forms to be a very suitable one. The best example of uncompensated acidosis was that associated with uraemia. In this clinical syndrome there was well marked acidosis, and the action of the kidney as a regulator had to be considered. The kidney in ordinary circumstances was capable of regulating acidosis. In a case of uraemia with a blood urea content of 0.8 per cent. the intravenous injection of saline led to a rapid excretion of urine with recovery from the symptoms of uraemia. With regard to ketosis he had observed the occurrence in the urine of acetone bodies in hospital patients in morning specimens of urine. The occurrence of intermittent glycosuria associated with acetone bodies in the urine had received attention. The acetone bodies which occur in the urine in pregnancy indicated that the pregnant woman was in a state of unstable equilibrium. The slightest restriction of carbohydrate at once led to the appearance of acetone bodies in the urine, and the same followed vomiting in pregnancy. His work on the pancreas had led him to the conclusion that a catalyst was produced in the pancreas, and was essential for the formation of ethereal sulphates, since in the absence of pancreatic juice in the intestine there were little or no ethereal sulphates in the urine.

Dr. W. D. WILKINS (County Mental Hospital, Leek, Staffs) mentioned the fact, to which attention had been drawn lately, that in a large proportion of cases of acute mental disease acetone bodies were contained in the urine, without disturbance of carbohydrate metabolism. There seemed to be a relation between the presence of acetonaemia and mental symptoms, since in uraemia and diabetic coma the mental symptoms were prominent.

Dr. E. GRACE SHERWOOD (Stafford) said that since February, 1920, she had tested for acetone the urine of all sick children coming under her notice in general practice. Acetonuria had been observed in measles, tuberculous meningitis, cervical adenitis, and jaundice, and in a number of cases with no definite other disease. Some of the cases had all the appearance of a bronchopneumonia, but there were no clinical signs in the lungs. They made a rapid recovery on administration of potassium citrate or sodium bicarbonate. Other cases showed gastro-intestinal disturbance, ulceration of tongue and mouth, and offensive stools. In a patient aged 2½ with tuberculous meningitis, acetonuria was the first clinical sign of disease detected. Signs of cerebral irritation appeared some days later. Acetone was present in the cerebro-spinal fluid. *Post-mortem* examination in this case showed old caseous tuberculous glands in the mesentery, and a large number of enlarged soft, red glands. The base of the brain was covered with tubercles, and on the base and vertex were ecchymotic patches similar to those found in cases of acute confusional insanity showing acetonuria. In the spleen were tuberculous lesions, and giant cells microscopically. The liver showed fatty change.

Mr. SYDNEY W. COLE (Cambridge) mentioned his confirmation of Piper's work on the effect of the administration of pancreatin by the mouth on the incidence of post-operative ketosis. He found that most hospital patients previous to an operation suffered from ketosis, due in many cases to carbohydrate starvation. But even if this were prevented by giving glucose overnight and before the operation, the administration of a volatile anaesthetic was very apt to bring on a severe ketosis, especially after a laparotomy. The previous administration of certain preparations of pancreatin by the mouth markedly decreased the ketosis in about 50 per cent. of carefully controlled cases. Various preparations of the pancreas seemed to be without action, and this action certainly bore no relationship to the enzyme content. Observations on the ketosis of pregnancy, associated with vomiting, indicated that it seemed to be due in many cases to a defective action of the pancreas, and in certain cases at least was amenable to treatment with glucose and pancreatin.

Dr. A. F. MARTIN (Bradford) asked whether there might not be a connexion between the action of toxins in acute disease and the presence of acetone in the urine so commonly found in such cases.

SECTION OF MEDICAL EDUCATION.

SIR GEORGE NEWMAN, K.C.B., M.D., F.R.C.P.,
President.

DISCUSSION ON PRELIMINARY SCIENTIFIC EDUCATION IN THE MEDICAL CURRICULUM.

(SIR GEORGE NEWMAN, President of the Section, delivered an introductory address on "The Place of Preliminary Science in the Medical Curriculum," and there followed papers on the medical student's science course from the standpoint of chemistry, of physics, of biology, of anatomy, and of pathology, by Professors Arthur Smithells, Sir Ernest Rutherford, Sydney J. Hickson, Arthur Keith, and J. Lorrain Smith respectively. These papers were printed in the BRITISH MEDICAL JOURNAL of July 3rd.)

GENERAL DISCUSSION.

Dr. SIMON FLEXNER (Rockefeller Institute, New York), speaking by invitation, said he did not feel himself competent to discuss medical education in England; his feeling rather was that they in America had gained so much in the past from English medicine that criticism or even suggestion by an American would be an impertinence. But there were certain aspects of medical education which must engage the careful attention of all on either side of the Atlantic who were interested in advancing medical

knowledge. It was rather from that point of view, and from the experience of the last twenty-five years in the United States, during which they had been endeavouring to raise the standard of medical education, that he might perhaps contribute to the discussion. One thing was axiomatic: namely, that the quality of education reacted upon the number of capable medical practitioners and investigators—laboratory men was a better name for them—who were turned out. It was true, as Professor Keith had suggested, that great talent in the way of investigation and discovery was rare, but there was, nevertheless, a very large amount of talent fairly generally diffused among our highly cultivated populations, and this could be made productive. Education offered the means whereby it could be so made. The talent for discovery was not wholly an innate or inherited quality; it came, or at least it was developed, as a result of education. Medicine to-day was a highly technical subject; it involved the use of instruments of precision; the medical man had to work more and more quantitatively. Machinery of an educational character was therefore needed to provide the practitioner as well as the laboratory worker with the crude materials on the basis of which observation and experiment could be carried out. Thus, the organization of medical education was of the first importance. He had an idea that in America the general respect for the man really trained in medicine was increasing. Yet the number of students who were going through the American schools was smaller to-day than during the period when that respect was less marked. The respect did not depend upon the number of persons who passed through a system, but upon the quality of the system through which they passed. There was something in the system which reacted upon the quality, not only of the average product, but of the men of unusual gifts who might drift into medicine. It was important, of course, to extend knowledge by research, but for the medical student research had a further importance—it had a fructifying influence upon him as he went through the stages of his education which nothing else could supply. At what point the student himself should come into that system of research it was difficult to determine finally. But it seemed to Dr. Flexner that in the organization of an educational system there must be allowed somewhere enough play for a young man, if he showed any bent or talent in that direction, quickly to get into touch with opportunities for some research on his own account which would prove most stimulating to him. Lastly, there should be no standardization of medical education—there must be a minimum of conformity. Qualification, of course, must be provided for, but the objects of this great experiment would be best served not only by insisting on a high standard but by allowing for diversity.

Professor PIERO GIACOSA (Professor of Pharmacology in the University of Turin) said he gathered that there were certain common views about medical education—namely, that a matriculation examination was necessary, and that some elements of the sciences of physics, chemistry, and natural history (zoology and botany) were to be studied in the secondary schools. He could assure them that such was the case in Italy, although there was room for improvement in these respects even in that country. He agreed with Sir George Newman in his description of the sound scientific basis required in the education of a physician. The practice of medicine must be built up on the solid ground of preliminary science, and no man ought to be allowed to announce himself as a specialist in any branch unless he had been through this fundamental curriculum. The specialist ought in every case to follow fixed post-graduate courses, and to submit special proofs of his attainments. This was what was going to be established in Italy. Professor Giacosa went on to urge the promotion of an international agreement with a view to obtaining a common standard of medical qualification in all civilized nations. Each country ought to conserve its own traditions and curriculums, but they should be so arranged as to produce the same results so far as the actual knowledge acquired by the medical student was concerned. The examinations in anatomy, physiology, and pharmacology in England and Italy, although different in their form, were substantially the same. He would leave it to the President of the Section to decide whether the time was ripe for a resolution on the subject, but certainly an international agreement ought to be in the minds of them all if medical education was to bear its best fruit.

The PRESIDENT said that Professor Giacosa's suggestion practically meant a free republic of medicine all over the world. One of the great difficulties was, of course, the varying standard of medical education and training. There were seventeen universities in Italy, twenty-two in England, and in America an immense number which they were endeavouring to reduce, so that really the issues raised by Professor Giacosa presented difficulties, but he would see that the suggestion was properly conveyed to the right quarters.

Dr. J. C. MCWALTER (Dublin) thought it necessary to get down to the existing situation. What was it intended to produce? A competent doctor. What did the public expect from him? They expected him to cure or to relieve, or to comfort, a sick man. It was now generally held that it was impossible to cure any disease. Sir George Newman would be the last to suggest that the ordinary practitioner—the individual unit amongst the 30,000 practitioners of these isles—could do anything to prevent disease; the question was, could he really do any good for the patient? Probably not. The greatest ambition, then, could only be to do as little harm as possible. It was simply a superstition that any good could be done to the public by meddling with their life-history. Recently the State had adopted the superstition, and the result had been profitable for the profession financially, but in practice it had done no good. The State treatment of tuberculosis was a ghastly failure. The new Health Acts would probably also be a failure, as they were a mere superstition, but, as this would mean money in the pockets of the profession, they ought in gratitude to do the public the least harm possible. Beyond that they would not hope to go. With all the boasted advances in medicine, the expectation of life after fifty-five years had lessened rather than increased. A doctor ought to have some tincture of learning above that of a secondary-school boy. At present the average practitioner had not. The standard of the preliminary education ought to be raised. Latin should always be essential, and Greek ought no longer to be omitted. A modern language like French or German should be a necessity, and also a sound training in biology, physics, and chemistry. The present standard in these subjects was higher in technical schools than in many schools of medicine. In fine, they should strive to do the minimum of harm.

Dr. R. C. BUIST (Dundee) said that the essential reform of medical education must begin in the elementary school. The *enfant terrible*, with his wickedly good memory and his obliviousness of limits, showed the chief capacities needed for the scientific investigator, but few survived the traditional methods in "education." Even classics could be taught by the methods of natural science with economy of time and efficiency in result. In the university improvement was throttled by the tradition of the systematic lecture. Memory of words was so easy to test. The ability of the mind to deal with the facts could only be tested individually. In detailed method the school teaching of physics was too often mere aimless weighing and measuring, forgetful of the fact that it was a habit of weighing and measuring that made the physicist, and not a weariness of these processes. The specialist teacher was so often impressed by the facts of his subject that he lost his objective—the producing of a physical, a chemical, a physiological habit in the mind to which he presented them—or, if he remembered, he abandoned the task of modifying these habits as being hopeless in the time at his disposal. The student thus came to his clinical teacher with a collection of terms, but with the instinctive reference to the underlying facts weak or absent. The clinical teacher must revitalize the student's mind backwards through pathology to physiology, and thence to physics or chemistry or biology, till he grasped the idea of the patient as a man or woman with the ordinary properties of matter, showing all the conservatism of their inertia and all their biological traditions, in whom, for the time being, there was a particular phase of disbalance, requiring the action of certain factors—physical, chemical, biological—in order to bring back the normal state.

Professor H. S. RAPER (Leeds) said that he was taught a great deal of chemistry at school before entering the university. In his first M.B. course at the university the facts taught were the same as those learned at school, but the method of presentation was very different. So different was it that he realized at the end of the course

what science really meant—a thing he had not realized after the school course. He felt strongly, therefore, that there was something in the presentation of the subjects of chemistry and physics at the university that could not be given at school. This was partly due to immaturity at school, and to the intellectual freedom of the university atmosphere. It was useful to inquire what was the fundamental principle which those who taught the medical student were trying to impart. They wished to make him scientific, and they must therefore train him to realize that science was advanced knowledge acquired by careful measurement and accurate observation. It was essential that he be trained to use his powers in this direction, and to trust his own work when it was well and carefully done, although the results might not harmonize with bald facts stated in his textbooks. He would thus learn how knowledge was won, and be able to make use of the same principles in the investigation of patients. By emphasis of this method the principles which would ensure the successful practice of medicine would be seen to be the same as those which were equally fundamental in the practice of chemistry, physics, or any other science.

Professor RITCHIE (Edinburgh) said that the important factor to be kept in mind in considering the preliminary education of the medical student was the psychological one. It was necessary to recognize that the school attitude and the university attitude towards knowledge were completely distinct. The first was receptive and dependent, the other was one of originality and independence. The problem of a university teacher was to develop in the student the faculties of original observation which were called for in facing the simplest clinical case. With regard to premedical education, the broader that was the better equipped would the medical student be for his later technical work, and in so far as school education in science was concerned its main object must be the utilization of scientific methods and technique for developing habits of exact observation. In this respect physics and chemistry were superior to biology as school subjects. There were, however, certain subjects of a literary and philosophical character which could not be taught at school and which it was an advantage to every medical practitioner to have studied. Provision should be made for these in the education of the student as was done in the preliminary "college" course insisted on in many American schools of medicine. It was only thus that the student of medicine could be prepared both for his profession and for the duties of citizenship. With regard to preliminary science at the university, the great difficulty was in getting the medical student to realize that he was not dealing merely with preliminary subjects, but that these furnished him with facts which were essential for him in his later technical studies. The only method of getting over the difficulty was to scrap the watertight compartment system in our medical schools and to substitute an organized and correlated curriculum in which each subject was dealt with in proper proportion and subdivided so that each aspect was presented to the medical student at the period in his curriculum when its practical bearings could best be realized. Finally, the principle must be recognized that a scientific subject could be treated in its practical applications to medicine without any sacrifice of scientific principle or method.

Dr. CAREY COOMBS (Bristol) said he would not have ventured to plead for a consideration of the claims of elementary psychology to be included in the preliminary part of the medical curriculum were it not for two circumstances: First, the whole profession, he believed, was feeling that our own experiences had proved to us the grievous inadequacy of our knowledge of psychology. Secondly, he had discussed the point with Professor Lloyd Morgan, whose opinion was of the highest value, not merely because of his position in the world of psychology, but also because for many years he had been connected with the early training of medical students. Professor Lloyd Morgan agreed that it was urgently necessary to give the medical practitioner of the future a far better grasp of psychological principles than he had received in the past. To do this it was advisable, if possible, to include some teaching of the elements of psychology in the earlier part of the medical curriculum. Another reason for doing so, he said, lay in the urgent need for reconciling in the mind of the medical man the clinical psychology that he must learn in the course of his practice with the academic psychology that was founded on accurate scientific methods. The difficulty, according to Professor Lloyd Morgan, lay in finding the right man to do the teaching. There were not many teachers of psychology who could take hold of academic psychology with the one hand and of empirical psychology with the other and weave them into a harmonious pattern. And yet, according to Professor Lloyd Morgan, the clinical psychology which was becoming so prominent to-day was really founded on the same facts as the academic psychology. Some kind of continuity ought to be shown to exist, lest clinical psychology should in the future fall away from its real foundation, scientific method. Dr. Coombs added that training in psychology was not only necessary for the production of efficient practitioners, but also for that of the investigators of the future. Much of the research work now being done and about to be done concerned itself with the reaction of mind on body, and it was highly important that such research should be conducted according to scientific principles.

Professor F. O. BOWER (Glasgow) said that in discussing the teaching of those subjects in the school as against the university period there was a psychological reason for treating physics and chemistry differently from the biological sciences. A boy took readily to sciences of measurement and exact statement, such as physics and chemistry, and these found their place rightly in the school period, leading up to courses in those subjects in the university specially designed for medical students. The boy could not at the age of 16 grasp with the same readiness sciences of comparison and opinion such as zoology and botany. It was an advantage to acquire at school some general knowledge of living things, but on entering the university the student should be launched upon the serious study of zoology and botany by the guidance of teachers who knew how to teach, who brought enthusiasm to the work, and selected such aspects of the biological sciences as should have their special value in relation to his later medical studies.

Professor J. A. LINDSAY (Belfast) said it was desirable for clinicians and those engaged in teaching the preliminary sciences to confer on this subject. What was wanted in the medical student was the acquisition of the scientific habit of mind, and especially the capacity for correct observation. How far the methods of observation cultivated in the chemical laboratory or the botanical gardens were of great utility in the hospital ward was a question upon which opinions differed. It was doubtful whether observation was a general or a specialized faculty. Medical education was confronted with three difficulties: First, the low standard of general education of students entering for the medical curriculum. Secondly, the overloaded state of the medical curriculum; the medical student of the time was overfed, and the final subjects were suffering from the multiplication of accessory courses of study. Thirdly, there was the difficulty of adapting the curriculum to the needs of that large majority of students whose future lay in general practice and that small minority who would become consultants and specialists. These difficulties might be to some extent insuperable, but it was well to study them and consider how far they could be mitigated. It was generally admitted that in the past the preliminary sciences had been taught with too little reference to their application to medicine, but this fault was in course of being remedied. These sciences should be taught partly as a mental discipline, partly in their direct relation to medical practice, and without burdensome detail. The student had too often the tendency to keep his pure science in one side of his brain and his medicine in the other side. Correlation should be cultivated. In the future it was probable that the schools would undertake the training of the student in elementary science, leaving the universities to provide teaching with a special reference to his future career. This proposal was viewed with dislike in some quarters, but it would probably become inevitable in view of the admitted necessity of lightening the curriculum. Reform was in the air. The fundamental principle which should govern any contemplated measures was the need of securing that the student approached the study of medicine, surgery, and the allied sciences with a trained mind.

Dr. H. B. BRACKENBURY, as an ordinary working member of the profession, deprecated the idea which seemed to run

through some of the speeches that there could be two races of medical men—one with something superior in the way of education and the other with something inferior, and that the latter would do for the average general practitioner. The man who was going to be a general practitioner all his life needed to be at least as good a scientific man as the specialist or the professor. His was a different kind of work, it was true, but he ought to be on as high a level in his own work as the specialist or professor was in his. There were, of course, many inferior general practitioners; there were many specialists also who were not good specialists—specialists who got into the habit of routine and lacked enthusiasm—and it had been admitted in that discussion that there were even professors who did not do their work properly. They were all medical men, even though some of them had got into different walks of medical life, and they must all recognize that they had something in common as members of the same profession. He could not admit the relegation of the general practitioner to a lower level. In the second place, nothing had been said with regard to the place of examinations. It was of no use leaving the present system of examinations with an altered system of curriculum. The registration of medical students might be prevented until they were 18 years of age if this was thought wise, but the requirement should be made that during the preceding years they had made acquaintance with scientific subjects. Lastly, he wanted to utter his profound conviction that medical sociology could not be separated from the subject of medical education. Whatever schemes for the development of State services might be forthcoming, everything depended upon the place occupied by the general practitioner.

Professor T. WARDROP GRIFFITH (Leeds) was a little doubtful about giving a vocational bent to the training at too early an age. How many of those present made up their minds to be medical men at the age of 16 or 17? Some of the changes suggested in the way of lightening the cargo would tend to the accentuation of specialism at an earlier date than was the case even now. He did not think that the present method of teaching chemistry, physics, and biology should be radically altered. The test of good teaching should be to get the student, when he came upon a bit of chemistry, or other subject which he had taken in the preliminary science course, to deal with it intelligently. Professor Griffith expressed his cordial agreement with the value of lectures, to which one speaker had referred slightingly.

Professor A. E. BOYCOTT (University College, London) said that the proposal to transfer chemistry and physics from the professional curriculum to the school curriculum was unfortunate. Chemistry and physics could not be taught effectually to boys of 15 and 16. When chemistry and physics were taught to schoolboys it meant simply that they were taught odds and ends of things, and the result was that they reached the university without knowing any chemistry and physics to speak of. His other objection was to the crude proposition that boys of 15, or even of 14, should be told that they were going to begin vocational education at that age. That would be a great set-back. What was wanted was schoolboys with well-trained minds, not youths who had already acquired a certain amount of detached information with a view to starting on a career.

Mr. A. G. TANSLEY, M.A. (Lecturer in Botany, Cambridge), said that a remark made by one speaker in the discussion furnished the key to the situation—namely, that the students often felt that these preliminary subjects were imposed upon them and were not really part of their necessary training. It seemed to him that in the past the teachers—certainly of biology, and perhaps also of chemistry and physics—had fallen into the mistake of trying to turn out zoologists and botanists or chemists or physicists, as the case might be. They had taken up the same mental attitude towards students who were preparing for medicine as they would take up towards students who were preparing for other degrees. There had been too much of a feeling that the teacher must insist on the importance of his subject. But the primary object of biology for medical students was to help to provide a broad basis for the more special studies which came after, while a secondary object was to give some knowledge of the simple animal types leading up to man, as well as some preliminary training in simple dissection. The ideal would be to have one teacher for the whole of the student's biology, which should be taught as one subject and not separated into botany and zoology. If this was impracticable they should try to establish a closer co-ordination between the teaching in the two branches and be careful elsewhere to insist on the fundamental aspects of the study of living beings rather than on the special problems of the botanist or the zoologist. As for the time necessary to give students a good grounding in biology, at Cambridge they had now sixty lectures and 120 hours' practical work, of which twenty-four lectures and 48 hours' practical work were given to plants. In his judgement that was enough for the purpose. Mr. Tansley briefly indicated the plan of his own course, and again urged that all teaching in biology should be frankly tested by the criterion of its importance to the medical student.

RESOLUTIONS.

Three resolutions were handed to the President of the Section, but were not formally put to the meeting. They were, however, tacitly accepted, and the meeting concurred by applause in the President's suggestion that he should be authorized to convey them, along with the whole text of the discussion, to the University Grants Board and to the General Medical Council for reference to its Education Committee. They read:

1. That the lowest age of registration for a medical student be 17 years.
2. That in the forthcoming revision of curriculum promised by the General Medical Council the lightening of professional studies would be facilitated if chemistry and physics were made school subjects, biology remaining a professional subject.
3. That with a view to securing adequate training in physics, chemistry, and biology as applied to medicine by courses of these subjects within the professional curriculum, it is desirable to exact a knowledge of physics and chemistry of matriculation standard of all medical students before they register.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANTIMONY IN LEPROSY.

IN view of the success that has been obtained when antimony has been used in the treatment of some chronic ulcerated conditions due to micro-organisms, as well as in diseases which are macro-parasitic in origin, I was induced to test the efficacy of the drug in treating some lepers at Durban who manifested various aspects of the disease. As it was difficult to arrange for intravenous injections, I confined myself to intramuscular injections of the drug, using Oppenheimer's colloidal antimony (oscol stibium) in doses ranging from 1 to 4 c.cm.

The decided improvement in the clinical condition of these patients and their own conviction that the treatment was doing them good, encourages me to publish a few notes on the cases; though the treatment had to be discontinued just when it had become most promising, because the Union Government was unprepared for the patients to remain longer in Natal.

Case 1 (Chengadoo) gave a seven years' history of his condition. His was a typical tubercular form of leprosy. He had lost both eyebrows, a sign of leprosy which Dr. Roycroft of Greytown first pointed out to me as characteristic of the disease. There were numerous ulcerated nodules on the hands and feet, particularly on the tips of the fingers and toes. Some of these were actively discharging. There were also occasional pains in the joints. On March 9th he received 1 c.cm. oscol stibium intramuscularly. This dose was repeated on March 11th, and on each day until the 15th. Improvement in the condition of the ulcers was noticed on March 13th, though only the worst were being dressed. The injections were then discontinued for ten days, though *Bacillus leprae* was present in the nasal discharge. On March 24th, after receiving a total of 6 c.cm., all the ulcers were dry except the extremities of the right fourth finger and the left index. The patient stated that the pains in his joints had improved. On the 25th intramuscular injections of 1 c.cm. oscol stibium were recontinued daily until the 31st, but omitted on March 30th. On March 26th all the ulcers were dry. Dr. W. A. Murray, the Government pathologist, who kindly examined the nasal discharge of these cases, reported that *Bacillus leprae* was present

on March 31st. Treatment was then discontinued for five days. At the end of this time two of the ulcers had broken out again. 1 c.cm. oscol stibium was given on March 6th, 7th, and 8th, and 3 c.cm. on April 9th and 10th, without ill effect, and it was proposed to continue with the larger doses; but as the lepers were sailing for Madras on April 20th treatment was discontinued. *Bacillus leprae* was present in the nasal discharge on April 13th. On April 16th, though the larger ulcers were still protected by dressing, there was no discharge except a slight haemorrhagic discharge from a nodule that had been grazed.

Case 2 (Dhama) could give only a three months' history of his condition. On March 11th there was pronounced left wrist-drop and contraction of both hands with "pins and needles" down each arm. There was also conjunctivitis of the left eye and irritability of the left eyelid. On March 28th he had had ten intramuscular injections of 1 c.cm. oscol stibium. After the fourth injection the eye condition had improved without other treatment. On March 24th, after the injections had been discontinued for nine days, the eye condition recurred, but was not so severe as when the treatment commenced. He stated that the sensations of pins and needles had disappeared from his left arm, which had been used for injection, and were better on the right arm. The patient was well able to straighten out his arms and hands, and there could be no doubt that his condition had materially improved. The injections of 1 c.cm. were recommenced on March 25th, and given daily for four days. On March 31st the patient had received 14 c.cm. of oscol stibium. Dr. Murray reported that *Bacillus leprae* was absent from the nasal discharge on March 15th and 31st. The injections seemed to have been responsible for an attack of diarrhoea lasting from March 29th to 31st, though the patient was subject to gastric trouble. However, 1 c.cm. was given intramuscularly on April 7th, 8th, and 10th, without appreciable ill effect.

Case 3 (Kamaru), with anaesthetic leprosy, commenced similar treatment on March 9th. By April 10th he had received a total of 18 c.cm. oscol stibium intramuscularly. No change in his condition could be detected. Bacilli resembling *Bacillus leprae* were present in the nasal discharge on March 15th and on April 13th.

Case 4 (David) commenced treatment on March 25th. He also presented the symptoms of the anaesthetic form of leprosy, with nasal catarrh and stiffness of the shoulders. He had worked at the Durban Zoo for several years, but his condition had only recently been diagnosed. Treatment commenced with 1 c.cm. oscol stibium intramuscularly daily for five days and again on the 31st. He received 1 c.cm. on April 6th, 7th, and 8th; 2 c.cm. were given on April 9th. No bacilli resembling *Bacillus leprae* could be detected in the nasal discharge sent to Dr. Murray at the Government laboratory on April 14th. The improvement in this leper's condition was very real. When the injections were discontinued on April 16th, after a total of 13 c.cm. had been given intramuscularly, he was able to move his arms about without difficulty, and touched his back over his shoulders to demonstrate the improvement he had experienced. He stated that the irritability of the skin on his face and arms had disappeared, and that there was much improvement in the condition of his nose.

Conclusions.

It would seem, from the study of these lepers, that intramuscular injections of antimony have a decided effect upon the changes produced in a patient where *Bacillus leprae* is at all active. Irrespective of the possibly beneficial action of antimony in regard to the infectivity of leper patients, antimony would appear to have a very beneficial effect on the general condition of leper patients.

Durban. F. G. CAWSTON, M.D.Cantab.

SYPHILIS INSONTIUM.

I WAS very interested to read about Dr. McWalter's case (June 19th, p. 827), as lately there occurred in my practice another example of the condition.

The female infant of Mrs. X. was born about three weeks prematurely; it had several sores around its wrists and ankles which appeared to be syphilitic. Mr. X. was a widower whose child by his first wife is a fine healthy girl of six years old. He had never suffered from venereal disease. Mrs. X. had never had symptoms of syphilis, but she had slept before her marriage with some female relations who (she found out afterwards) were affected by the disease.

Examination of fluid from the sores on the infant showed the *Spirochaeta pallida*. A Wassermann reaction in the case of the male was negative, of the female positive. The most extraordinary fact is that the husband escaped infection.

Dublin. BETHEL SOLOMONS.

THERE are at present 7,724 female students in the German universities, 2,080 of whom are studying medicine, as compared with 944 in 1915, 200 dentistry (65 in 1915), and 16 pharmacy (6 in 1915).

Rebielus.

RELAXATIONS OF A SURGEON.

IN the spring of 1880 Sir JOHN BLAND-SUTTON joined the Middlesex Hospital as a student; in the spring of the present year he retired after serving his hospital as student, teacher, and surgeon for a continuous period of forty years. During that period he has not only earned for himself a lasting place in the history of his hospital, but has also won for himself a name and fame in the English-speaking world. In the volume of essays[1] issued as a memento to mark the fortieth milestone of a busy professional life, the author spreads the riches of his mind for the reader's delectation.

Somewhere Samuel Butler has said that no man can write a book without reflecting his unconscious self in its pages. In this volume of anatomical and biological sermonettes the reader, if he is so minded, can discern the secret of the author's success in life. He has become great because he has succeeded, as few men have done, in keeping his interest and curiosity in the romance of living things as keenly alive at the end of forty busy years as they were on the day he first took a scalpel in his hand. He began his studies when Darwin's teaching was taking a firm hold on the minds of younger men—particularly in those interested in anatomical problems—leading them to see that every structure in the human body has a history which could be unravelled by dissection if the dissector had the gift of imagination. Bland-Sutton had this gift and was carried away on the crest of the evolutionary wave, and his interest in its progress has never palled.

In his student days this London bred lad spent his spare hours in the prosectorium at the Zoological Gardens hunting out the evolutionary history of ligaments, which, when written under the glow of his imagination, read rather like a romance than a narration of dull, dead facts. These essays on ligaments, with which several generations of medical students have become familiar, form the first twelve of the present series of essays; the remainder, twenty-seven in number, are the products of recent years—but all of them, even the most recent, has on it the same fresh bloom which marks the earliest. His interest in the marvellous adaptations to be seen in the stomach of the ox and gizzard of the fowl is as lively in 1919 as when he noted, "with admiration and delight," the manner in which the penguin, swimming under water in the aquarium of the Zoo, could use its degenerate wings as flippers.

We may cite a sample or two from these essays to show how patiently their author nursed his facts, hoping that further observations might clear up those which had the appearance of being mysteries. In a veterinary museum in France, which he visited while still a student, he noted a horse's skull with teeth implanted in the region of the mastoid. Then opportunities came his way of seeing living horses with mastoid teeth; he found the cavity in which they were placed always opened on the surface near the ear as a weeping fistula. Later he obtained guidance to the nature of these curious teeth from the examination of a sheep's ear, sent to him by John Evans, of Aberdare, in 1890. Near the opening of the ear there was implanted the normal incisor tooth of a lamb. Further observations showed him there existed all stages leading from a dentigerous mastoid cyst to a vestigial or duplex head attached to the parent head in the region of the mastoid; the mastoid teeth and fistula represented the mouth and jaws of a rudimentary twin head. The author's epigrammatic statement is that "mastoid teeth are memorials of a lost individual."

Another illustration of the continuity of his observations may be taken from his essay on abdominal pregnancy. It was when the author of these essays was still a medical student that Lawson Tait introduced operative treatment for ruptured tubal pregnancies and thereby reawakened an interest in the condition known as abdominal pregnancy. Bland-Sutton had noted the condition in mammals and observed that in such cases marks were always present of a former rupture of the uterus. He was able to satisfy himself that in every case of abdominal pregnancy the

[1] *Selected Lectures and Essays.* (Including Ligaments, their Nature and Morphology.) Fourth edition. By Sir John Bland-Sutton. London: Heinemann. 1920. (Pp. 309; 111 figures. 15s.)

actual conception had occurred in the tube or uterus and that a gestation in the abdomen was secondary, being due to rupture of uterus or tube.

Sir John Bland-Sutton has Frank Buckland's eye for the curiosities of natural history and John Hilton's racy, piquant and simple style. Indeed from his style alone one might well suspect him to be a student of the Bible, but there is no need to guess, for in these essays he gives us the most ample evidence. A series is devoted to "Medicine in the Bible" and biblical quotations are freely used, as when he cites a verse from Jeremiah which he believes will "bear the interpretation that this prophet, a keen naturalist, was familiar with the retained fetus." He has a lively sense of humour, and we are tempted to make one or two extracts to show the fullness and finish of his graphic, crisp style—the style of the born demonstrator of anatomy.

> In 1904 a gardener, aged 38, had signs of stones in his right kidney. The radiograph showed such a large shadow as to make me doubt its accuracy. During the removal of this kidney I had a great surprise; on withdrawing it from the loin, the sacculus containing the stones burst. In an instant the operation area was covered with hundreds of iridescent calculi resembling little balls of burnished gold. We tried to pick them up, but they ran over the towels, slipped between them, dropped on the floor like hail and were as elusive as globules of quicksilver.

The collected calculi to the number of 40,000 are now preserved in the Museum of the Royal College of Surgeons of England—the recipient of many of the rarest trophies discovered and won during Sir John Bland-Sutton's professional career. Here is another brief picture from the essay on "Circumcision," but clearly penned from experience gained in the streets of an Egyptian city:

> The ceremony is attended with great show, the boy being conducted through the streets in gaudy attire, attended by a procession, musicians, and the barber who cuts off the foreskin.

Or still another pen sketch, made during a transatlantic voyage, from the essay in which he descants on the degenerate muscles of "legs, wings, and flippers":

> If one steals unawares upon the whale in the fancied security of solitary seas he may be found playing kitten-like on the ocean as if it were a hearth. He flits the broad flukes into the air and smites the surface of the water with a thunderous concussion that may be heard for a long distance.

A passage which is reminiscent of Job; but in reading these essays one is more frequently reminded of the great John Goodsir when he explained: "I love the horse; I have dissected him three times." Bland Sutton has dissected and described the marvellous mechanisms he has found in the animal kingdom because he loves them. In these essays, too, there are new observations published for the first time, such as the feeding of the fallow deer with madder to study the manner in which their antlers grow, and the dissections made to demonstrate the changes in the symphysis pubis of the pregnant guinea-pig before the young pass through the pelvis. He has also striven to revive two lost arts. One of these is the art of practising a first-hand knowledge of comparative anatomy on the part of consulting surgeons; the other is the art of wood engraving. No one who values the art of illustration will turn over the pages of this volume without being struck by the beauty of the 111 wood block engravings which enhance the interest of its pages—the work of Berjeau and Butterworth—some of them being made from drawings by the veteran anatomist artist, Mr. R. E. Holden. In seeking to resuscitate the art of wood engraving Sir John Bland-Sutton has added another to his many services to medicine and to literature.

"THE EXTRA PHARMACOPOEIA."

THE first volume of the seventeenth edition of MARTINDALE and WESTCOTT'S *Extra Pharmacopoeia*[2] is now before us, and we know that the whole profession will welcome the appearance of a new and thoroughly up-to-date edition of this invaluable compendium of information. It is five years since the appearance of the last edition, and these have been years of rapid change, and hence the new volume contains a very large amount of fresh information.

The *Extra Pharmacopoeia* has been in universal use for so many years that it is unnecessary to describe its general merits, which are well known to all medical men and pharmacists; indeed, the new items of interest that it contains are so numerous that it is not possible to describe them in detail. The authors, however, furnish a preface of 20 pages, in which a concise review of the more important new features of the book is given. This preface is, indeed, a summary of all the important advances in therapeutics since 1915.

The new antiseptics, introduced to meet the demands of war surgery, are perhaps the most important and interesting of all the new drugs described; for instance, the preparation, chemical characters, and therapeutic actions of chloramine-T, eusol, acriflavine, malachite green, and brilliant green, as well as bipp, are described, and we believe that this is the first time that all this information has been collected and published in a readily accessible form.

Some of the other recent advances in therapeutics mentioned are the improvements in the technique of the treatment of syphilis with organic arsenic preparations, and of malaria with quinine, that resulted from the use of these remedies on a large scale during the war; the use of antimony preparations in the treatment of tropical diseases; the actions of vitamines, of colloidal metals, of chaulmoogra oil, and of quinoidine. These are merely some of the forty subjects which the authors mention in their preface as being additions of outstanding interest to the *Pharmacopoeia*.

A new feature of the work which will be of particular interest to chemists is the description of the process of manufacture of some sixty organic chemicals, the subjects of expired British patents; many of them were previously made in Germany. A German patent specification is, the authors point out, usually a series of ingeniously devised booby traps, designed to hinder anyone attempting to produce the drug concerned. The authors state that the directions which they furnish will enable chemists to avoid these traps, and that most of this information has been acquired by them by research; this knowledge they now give to the world.

The volume concludes with a most useful summary of all the recent Orders in Council and Acts regulating the sale of drugs and poisons.

In general the book deals in a very exhaustive fashion with the chemistry of practically every drug in use in medicine, and provides a mass of information about the recent advances in therapeutics that can be found nowhere else in an accessible form.

When so much useful information is provided in so convenient a form, it seems ungracious to criticize, but there is no doubt that the value of the volume would be increased if more copious reference were given to the results of pharmacological research. Full references are made to all articles appearing in the important chemical, pharmaceutical and clinical journals, but very scanty references are made to pathological, pharmacological, or biochemical journals. Hence only those researches upon the action of drugs which happen to appear in clinical journals are referred to, and, as a result, the evidence given as to the action of a drug in many cases does not represent the most reliable work on the subject.

For instance, as regards cocaine, the authors state in the preface: "Personally we think that cocaine itself as an anaesthetic has only fallen into disfavour through a few exaggerated mishaps owing to faulty technique." This conclusion does not agree with the reported cases of mortalities produced by local anaesthetics, which show that severe toxic symptoms and death occur more frequently after the use of cocaine than after the use of cocaine substitutes, and moreover the exhaustive researches of Hatcher (Eggleston and Hatcher: *Journ. of Pharm. and Exp. Ther.*, xiii, 1919) have shown that cocaine is very much more toxic to animals, when injected hypodermically, than are most of the cocaine substitutes, but no reference is made by the authors to this work.

Again, the antiseptic actions of hypochlorous acid and dyes are dealt with at length, and full references are given to all work appearing in the *Lancet* or in the *British Medical Journal*, but no reference is made to Carrel's original work on this subject (Carrel and Dehelly: The Treatment of Infected Wounds, *Military Medical Manual*, 1918).

Probably the authors feel that the enormous bulk of scientific literature compels them to restrict the scope of their references, but their work is so well known and

---

[2] *The Extra Pharmacopoeia*. By W. H. Martindale, Ph.D., Ph.C., F.C.S., and W. W. Westcott, M.B., D.P.H. Seventeenth edition; vol. i. London: H. K. Lewis and Co. 1920. (Fcap. 8vo, pp. 1150. 27s. net.)

convenient that it enjoys an almost semi-official status, and hence it is very important that practitioners consulting it should realize these limitations in the scope of its references. We have called special attention to this omission of references to the bulk of recent pharmacological research because, unfortunately, it has a general significance; it is an indication of the divorce existing between laboratory research and the clinical use of drugs.

The *Extra Pharmacopoeia* is now in its seventeenth edition, and if there had been any general demand from the medical public to hear the results of scientific research, as well as the results of the clinical application of drugs, then fuller references to the former would undoubtedly have been provided long ago. Yet the example of the action of local anaesthetics, already mentioned, should convince anyone of the importance of a knowlege of the results of laboratory research upon the action of drugs. The practitioner desires a drug that will produce local anaesthesia, but which will not produce toxic symptoms when absorbed, and particularly one which will not produce an occasional fatal result. Now the only possible way of accurately determining the comparative toxicity of two drugs is by animal experiment, and in the case of local anaesthetics these experiments have been performed on a large scale, with very definite results. Therefore it is a matter for regret that in this, the most popular non-official Pharmacopoeia in the English language, the action of the various local anaesthetics should be discussed and numerous references given to toxic actions observed in clinical practice, and yet no reference made to the results obtained by carefully controlled experiments upon animals.

We have perhaps given rather undue emphasis to this one aspect of the book, but it indicates what we believe to be an undesirable trend in medicine. In concluding this review, however, we wish once more to emphasize the fact that the *Extra Pharmacopoeia* represents an amazingly thorough collection of all the most recent evidence concerning the chemistry and the clinical application of nearly every drug in use in medicine; and, after perusing it, the reader is astonished that it should be possible to compress so much information into a pocket volume.

NOTES ON BOOKS.

THE thirty-sixth issue of the *Year Book of the Scientific and Learned Societies*[3] gives a brief record of the work done in science, literature, and art during 1918–19, together with particulars of Civil Service departments which carry out or supervise scientific research. The *Year Book* is compiled from official sources, and gives a handy synopsis of organized scientific undertakings in Great Britain and Ireland. Twenty-six societies not previously appearing are included in the present edition. The section devoted to medicine occupies thirty-five pages. The entry referring to the British Medical Association gives the officers of the Association and the members of Council, but the statement that "no scientific meeting was held" in 1919 should have been corrected, for a special clinical and scientific meeting was held in April. In the next edition of this useful reference book we hope to see a record of the scientific work carried out in the Sections at Cambridge this summer, and perhaps a reference to the British Medical Association lectures, which are proving so successful.

[3] *The Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* Thirty-sixth annual issue. London: C. Griffin and Co., Ltd. 1919. (Demy 8vo, pp. 342. 9s. net.)

APPLIANCES AND PREPARATIONS.

Light Filters for the Microscope.

MESSRS. KODAK, Limited, in addition to their light filters for photomicrography, now announce a set of nine circular filters for visual work with the microscope. They are 1⅛ in. in diameter, and are for the standard substage ring. Blue, green, yellow, and red are the colours used; and one, "tungsten to daylight," is for the conversion of the light from metal filament vacuum lamps, etc., to equivalent daylight. Full information concerning the use of these filters can be obtained by applying to the makers for a pamphlet entitled "Notes on the use of Wratten M Filters." The price of the set of nine is £2 5s.

MINISTRY OF PENSIONS.

APPOINTMENT OF CONSULTANTS.

THE following physicians and surgeons, in addition to those whose names have already been announced, have consented to act as honorary consultants to the Ministry of Pensions:

Honorary Consultants in Cardio-vascular Cases.—Dr. J. McIlwaine, Ulster Region; Dr. H. J. Starling, Eastern Region; Dr. Carey F. Coombs, South-Western Region; Dr. T. Wardrop Griffith, C.M.G., Yorkshire Region; Dr. W. E. Hume, C.M.G., Northern Region; Dr. John Hay, North-Western Region; Dr. Thos. Mather Thomson, Ireland South Region; Dr. W. T. Ritchie, O.B.E., Eastern Portion of Scotland Region; Dr. John M. Cowan, C.B.E., Western Portion of Scotland Region.

Honorary Consultants.—Sir James Dundas Grant, K.B.E., Honorary Consultant in Aural Diseases to the Ministry; Dr. Hugh Maclean, Honorary Consulting Physician to the Ministry; Sir Robert W. Philip, M.D., Honorary Consulting Physician in Tuberculosis to the Ministry; Mr. Chas. J. Bond, C.B., C.M.G., Honorary Consulting Surgeon in East Midland Region; Dr. Astley V. Clarke, Honorary Consulting Physician in East Midland Region; Sir Arthur Chance, C.B.E., Honorary Consulting Surgeon, Ireland South Region; Dr. W. R. Dawson, O.B.E., Honorary Consultant on Functional Nervous and Mental Cases for Ireland; Dr. F. C. Purser, O.B.E., Honorary Consultant on Organic Neurological Cases for Ireland.

VITAL STATISTICS OF ENGLAND AND WALES.

(Concluded from p. 874, vol. i.)

THE PUERPERAL STATE.

DURING 1918 the number of deaths assigned to pregnancy or childbirth was 2,509, corresponding to a rate of 3.79 per 1,000 births. If the classification be adopted which was in use up to 1910 there must be deducted from this number 156 deaths, which with one exception were allocated to puerperal nephritis and albuminuria; the mortality thus calculated is reduced to 3.55 per 1,000 births, as against an average of 3.74 in the ten years immediately preceding and 3.66 in 1917. If 2,529 deaths from enteric fever, malaria, influenza, pulmonary tuberculosis and other conditions stated to have been caused by or associated with pregnancy and childbirth be included, the proportion is raised to 7.6 per 1,000 births—a figure greatly in excess of those of previous years, which ranged during 1908–17 from 4.77 to 5.27. For this sudden inflation of a stable mortality influenza was wholly responsible; in connexion with pregnancy or childbirth 1,620 more deaths took place from influenza and 225 more from pneumonia than during 1917. Of the 2,509 deaths assigned to pregnancy 54 were attributed to haemorrhage of pregnancy, 137 to placenta praevia, and 184 to other puerperal haemorrhage. Among other "accidents of childbirth" to which deaths were attributed were: contracted pelvis 35, Caesarean section 19, rupture of uterus 16, and inversion of uterus 8. Under the heading "puerperal fever" (845 cases) 478 deaths were ascribed to septicaemia or sepsis, 98 to peritonitis, 21 to pyaemia, 19 to pelvic cellulitis, 16 to septic phlebitis or septic thrombosis, and 7 to pelvic abscess. Deaths ascribed to puerperal convulsions numbered 388.

SUICIDE.

During 1918 the number of deaths ascribed to suicide was 2,765 (1,845 males and 920 females). In addition 1,245 other deaths (913 males and 332 females) were returned at inquests under "open verdicts," and although classed as accidental must in many cases have been due to suicide; the great bulk of these (674 males and 332 females) were cases of drowning. For both sexes, but especially among females, the deaths allocated to suicide showed some increase over the unusually low figures of the preceding year. The increase was present in each quarter, but was much more marked during the fourth quarter, when 709 deaths were registered, or 168 more than in the same quarter of 1917, and more than in any fourth quarter since 1914. The great rise of suicide mortality during the fourth quarter of 1918—a period of national rejoicing—appears all

the more remarkable when it is remembered that during the last decade the deaths from this cause have with great constancy been fewer in the fourth than in earlier quarters of the year. Dr. Stevenson remarks that divergence from so well established a rule suggests the existence of some special inducement to suicide among the female population about the period of the armistice, which was signed on November 11th. It has been stated that about this time many women were greatly disturbed at the prospect of the return of husbands who were likely to discover children—born or unborn—whose existence had been concealed from them during their absence on military service. Dr. Stevenson has tested this conjecture by making a weekly analysis of the deaths from suicide among females during the last quarter of 1918; the figures were:

Week ending October 12th, 22; October 19th, 18; October 26th, 17; November 2nd, 21; November 9th, 33; November 16th, 23; November 23rd, 22; November 30th, 15; December 7th, 20; December 14th, 17; December 21st, 19.

The November excess is thus seen to be quite definite; its height was reached at a time when, although the armistice had not been signed, it may well have been evident that the war was almost over. Another analysis shows that nearly all the increase occurred among females of child-bearing age; in 1918, 61 per cent. of deaths were of women under 45, as against 51 per cent. in the previous four years. Dr. Stevenson concludes that "the records both of date and age are consistent with the hypothesis suggested, but, of course, they do not prove that the increase was caused entirely in this way." An examination of the modes of suicide employed since 1911 shows a remarkable decline for both sexes in suicide by poison. The yearly deaths from this cause of males have fallen from 305 in 1911, and 324 in 1912, to 102 in 1917, and 96 in 1918; and those of females from 210 and 223, to 94 and 122, respectively. No legislation has been passed which could account for this; and consultation with the Pharmaceutical Society showed that during the war there had been no increase in the difficulty of purchasing the poisons usually employed for suicide. In marked contrast with this decrease, the mortality from coal-gas poisoning became greater during the war. As might be expected, suicide by means of weapons—firearms and cutting or piercing instruments—was more common. The standardized mortality rate per million from suicide was 82 in London, 71 in county boroughs, and 87 in rural districts, as compared with 74 in all areas in 1918.

PREVENTION OF VENEREAL DISEASES.

DEPUTATION TO THE MINISTER OF HEALTH.

A DEPUTATION of the Society for the Prevention of Venereal Disease was received by Dr. Addison, Minister of Health, on July 2nd. The members included Dr. R. D. Batten, Mr. H. Wansey Bayly, Dr. Bond (M.O.H. for Holborn), Colonel E. T. Burke, Sir James Crichton-Browne, Sir Bryan Donkin, Captain W. E. Elliot, M.P., Dr. Mearns Fraser (M.O.H. for Portsmouth), Dr. Reginald Hayes, Professor Leonard Hill, Sir W. Arbuthnot Lane, Mr. C. F. Marshall, Sir Frederick Mott, Sir Thomas Oliver, Sir G. Archdall Reid, Dr. C. W. Saleeby, Dr. J. H. Sequeira, Professor W. J. Simpson, and Dr. Leonard Williams.

Lord WILLOUGHBY DE BROKE, who introduced the deputation, submitted the following resolution:

> That inasmuch as the Ministry of Health has failed, and public bodies, including the London County Council, have declined, to provide the means of delayed disinfection against venereal disease at ablution centres, this meeting calls upon the Ministry of Health and upon local authorities to instruct all qualified chemists to sell such means of immediate self-disinfection against venereal disease as may be approved from time to time by the Ministry of Health or by medical officers of health.

Everybody, he said, was agreed that all the influence of research and administration ought to be applied to the prevention and cure of venereal disease, and that all means of moral prevention ought to be constantly employed, especially with regard to the youth of the nation. With regard to the question of medical disinfection, he said a policy of setting up disinfecting centres was full of pitfalls and difficulties. The society, therefore, was addressing itself to the efficacy of immediate self-disinfection, and the policy they recommended was that the Ministry of Health should take such steps as would educate the public in the whole hygiene of this important subject. He urged that the knowledge which had been coming out since the war should be wisely and scientifically directed by the Ministry.

Captain W. E. ELLIOT, M.P., said that the House of Commons was intensely interested in the problem of the prevention of venereal disease, and that the measures for the prevention of these diseases were not being pushed with sufficient vigour. They felt that as it was by quite a recent legislative Act of the House of Commons that the sale of disinfectants was prohibited, unless very much stronger arguments could be brought against it than had hitherto been done, they could not continue the responsibility of prohibiting the sale of disinfectants approved of by medical men.

Dr. SEQUEIRA stated that the number of new male patients, mostly ex-soldiers, suffering from syphilis, admitted for treatment at his clinic at the London Hospital in 1919 was 90 per cent. above the number attending in 1918, and that there was an increase in female patients of 15 per cent. He considered that the increase in cases of ophthalmia neonatorum and lip chancres proved that there was a definite increase in venereal disease, and that increased attendance at clinics was not the result of increased knowledge of these diseases amongst the people. Lord Astor's statement at the annual meeting of the National Council for Combating Venereal Disease, that "death from syphilis, general paralysis of the insane, and locomotor ataxy had not increased," was grossly misleading.

Sir ARCHDALL REID stated that about 40,000 men passed through his hands during the war, and up to 1917 there was a vast amount of syphilis. In the beginning of January, 1917, a policy of immediate self-disinfection was advocated among the troops under his command, with the result that venereal disease practically disappeared. He considered that the evidence against immediate self-disinfection produced by Lord Astor's Interdepartmental Committee was most unreliable. The White Paper admittedly made most inaccurate statements, and could not be trusted.

Mr. WANSEY BAYLY said he was permitted by the Secretary of the Labour Party to state that—

> The matter is now under discussion, and that, judging by the expressions of the committee at the last meeting, the great majority of them are in favour of a very wide distribution of the literature issued by your society and the dissemination of the knowledge contained therein.

He had recently given twelve lectures to trade union organizations, and on every occasion a unanimous vote of accord with the society's aims had been passed. He read a long list of names of distinguished medical members of the grand committee of the society, and he concluded from the wide support the society had received from these leaders of the profession that the bulk of medical opinion was with his society. He stated that fourteen borough councils had adopted the policy of his society, and that the National Birth-rate Commission in their last report recorded the opinion that the methods for prevention of venereal infection by immediate self-disinfection should not be withheld from the public.

Dr. C. W. SALEEBY stated that at present venereal disease was beating the Ministry of Health, and was spreading at the present moment at an appalling rate, and that he had personal knowledge from Manchester that this was the case.

Dr. MEARNS FRASER considered that the Ministry of Health was failing to apply the knowledge due to the growth of modern science to the solution of the venereal disease problem. He related how he had induced the public at Portsmouth to go in for immediate self-disinfection.

Lady ASKWITH read a short communication from Dr. Jane Lorimer Hawthorne, who was prevented by illness from attending. She considered that of all racial poisons syphilis had the most far-reaching effects upon maternal and child life, and that if women knew that it was this that killed their babies before birth, during birth, and after birth, they would not be content to go on merely hoping for better things, but would demand that their sons and daughters should be equipped with a knowledge of life's difficulties and problems.

Sir WILLIAM ARBUTHNOT LANE appealed for the financial support of the Ministry of Health, and based his argument on the fact that the Society for the Prevention of Venereal Disease is composed, with comparatively few exceptions, of medical men who have everything to lose by the destruction of disease and nothing to gain.

Sir JAMES CRICHTON-BROWNE pointed out that of the three chief killing diseases—cancer, tuberculosis, and venereal disease—in the latter alone had we a preventive immediate in its action, and, if properly applied, almost infallible. He thought that if we could instantly abolish venereal disease the Chancellor of the Exchequer need have no anxiety about excess profits; he urged strongly that the society should be given such assistance as would enable it to spread abroad knowledge by means of which prevention could be obtained.

Reply by the Minister of Health.

Dr. ADDISON, in replying, said that they did not really know whether venereal disease was increasing or not, because they had no data supplied of a properly ascertained scientific kind. They knew that there was a great increase of people attending centres or clinics. The propaganda of the society represented by the deputation, and the general public enlightenment, were perhaps bringing people to realize that they must be properly treated. At all events, they had not got a basis of ascertained fact on which it was quite safe to dogmatize. It was suggested that the Ministry should issue certain instructions to local authorities and to the public, and he pointed out that it would be necessary to have an overwhelming case

to justify such action and to avoid the conflict of opinion. They would have to contend with a great wave of public feeling, which would suggest that the Government was really encouraging vice. It had been urged by the deputation that their suggested policy would be successful if scientifically and thoroughly done. That might be a true statement. They could not, however, deal with a population of 40 millions on the same basis as Sir Archdall Reid, with iron discipline at his command, could deal with 2,000 soldiers at one time. That was quite different from placing something at the disposal of any citizen with certain instructions as to use. They had to have a very strong case that would meet the intense and vehement opposition which such a proposal would arouse, and if they were not successful it would put the whole movement back a generation. There would be great objection raised, and he thought they must admit that a great deal of it would be well founded. To adopt such a proposal towards the population as a whole—boys and girls, men and women—would be held, and he thought with material ground, as doing something which would tend to encourage people to run risks. Last year he appointed a very strong body of men, who had reported to him that certain drugs, if properly applied, were efficacious, but if these drugs were not properly or scientifically applied their efficacy could not be relied upon. They also reported that the use of such drugs gave rise to a false sense of security and encouraged the taking of risks, and that, in spite of the most careful instructions, the issue of packets to soldiers resulted in men who used them for self-disinfection still having infection. Could they rely, he asked, on the general public properly and scientifically using those things? (Lord WILLOUGHBY DE BROKE and others: "Yes.") He did not think that that was a question that could be satisfactorily answered. In Manchester two experimental centres had been established under the corporation, and so far the results were encouraging; those experiments were being watched with anxiety. He assured the deputation that the Ministry was anxious to take any practical measures they could thoroughly recommend for the prevention and treatment of the disease, and they were quite prepared, if they were certain they were going to have good results, to face novel methods. He thought the campaign of instruction and enlightenment which the society was carrying on was all to the good.

MEDICO-POLITICAL MATTERS IN TASMANIA.

As a consequence of recent legislation adopted by the Tasmanian Government very grave issues have arisen, and the fundamental principles which have hitherto determined the relations between the State and the medical practitioner throughout the empire are threatened. In our issue of April 19th, 1919 (p. 435), a summary was given of the chief events of the dispute which has led to the present very unsatisfactory situation.

The dispute arose in 1916 in connexion with the Tasmanian general hospitals; the greater part of the income of these hospitals is derived from Government grants, but they had honorary staffs. The Tasmanian Branch of the British Medical Association raised objection to the treatment of well-to-do persons in these hospitals; the view of the Government, on the other hand, was that the hospitals were for all classes, and that the rich and the poor had equal claims for treatment therein. In spite of protracted negotiations a deadlock occurred, and in April, 1917, the honorary staffs of all the hospitals resigned, expressing at the same time their willingness to continue to serve the hospital until suitable arrangements had been made, and to attend emergency cases when requested to do so by the resident staff. The offer was not accepted, and a new staff was appointed. From January, 1918, until January, 1919, information concerning the State aided hospitals of Tasmania was published in the *Australian Medical Journal* and this JOURNAL.

In the autumn of 1918 the Tasmanian Legislature passed an Amending Medical Act, which permitted the admission to the medical register of the island of practitioners qualified in America, a country with which Tasmania is not in medical reciprocity. The duration of the curriculum in America may be only four years, whereas in Australia it must be five years at least. In 1919 at least two officers with American qualifications formed part of the hospital staffs.

Since then grave developments have occurred. On December 24th, 1919, an Act to amend the Medical Act of 1918 was passed by the Tasmanian Legislature. This extraordinary piece of legislation comprises the following provisions: (1) The Tasmanian Medical Council is deprived of the power to remove from the Medical Register the name of a medical practitioner who has been convicted of a felony or misdemeanour, or who has been guilty of infamous conduct in any professional respect. In such cases the Medical Council must now apply for an order of the Supreme Court or a judge thereof, giving particulars of the charge made and the grounds of the application; "every person, for the removal of whose name any such application shall be made, shall have the right to have the truth of disputed matters of fact determined by the verdict of a jury in like manner as issues in actions are tried in the court in its ordinary jurisdiction. Questions of fact to be tried by the jury shall be stated in writing, and in case the parties fail to agree upon such questions, the same shall be settled by a judge prior to the hearing." (2) By Clause 19a (1) of the Act it is made an offence (entailing heavy penalties) for any one registered practitioner to refuse or fail to meet in consultation any other registered practitioner. (3) Clause 19b makes it a similar offence for any person or association to prevent, or attempt to prevent, directly or indirectly, any medical practitioner from accepting an appointment in a State-aided hospital. We subjoin *in extenso* these truly remarkable clauses:

19a (1) If any registered medical practitioner in active practice without reasonable excuse (the proof of such reasonable excuse being upon him) refuses or fails to consult with or render professional assistance, in consultation, to any other registered medical practitioner seeking such advice or assistance, he shall be guilty of an offence, and shall on conviction forfeit and pay for each offence a penalty of not less than fifty pounds nor more than two hundred pounds. The foregoing expression, "reasonable excuse," shall not include any resolution or by-law or any agreement of any company, association, or body of persons whatsoever, whether verbal or written.

(2) The registered medical practitioner seeking any such advice or assistance as hereinbefore mentioned shall in every case be legally liable to pay to the registered medical practitioner rendering such advice or assistance a fair and reasonable fee (including expenses if any therefor), and shall, if requested to do so, pay such fee in advance.

19b. Any person, association, company, or body of persons who directly or indirectly prevent, or endeavour to prevent, or aid in preventing in any way whatsoever, any medical practitioner, nurse, or other person applying for, accepting, or holding any appointment or position in any State-aided hospital or charitable institution, shall be guilty of an offence, and shall on conviction forfeit and pay for each offence a penalty of not less than twenty-five pounds, nor more than two hundred pounds.

The Tasmanian Legislature, in sanctioning these pieces of legislative "frightfulness," has frankly divested itself of the robe of the statesman, and assumed the armour of the partisan. We greatly doubt, however, whether the Tasmanian doctors will allow themselves to be terrorized. While sympathizing with them on the deplorable limitations and distortions which characterize the outlook of the Tasmanian bureaucracy, we do not doubt that they will continue undismayed to resist outside dictation as to the way in which they shall give or not give their services to charity.

The clause which makes it an offence to refuse or fail to meet any other doctor who desires a consultation constitutes an unwarrantable interference with individual liberty. In the absence of a universal State service this clause is unjustifiable, and to attempt to enforce it would be monstrous. Clause 19b is, of course, aimed at the British Medical Association, which published in its JOURNAL a statement advising readers, before applying for posts in the State-aided Tasmanian hospitals, to make themselves acquainted with the conditions of dispute. At the request of the Tasmanian Branch, which wishes loyally to observe the law for the time being in force in the State, this statement is not being repeated, but it is deemed advisable to lay the facts before the members of the Association and the profession generally. We shall not hesitate to recur to the matter when necessary in order that the development of the position in Tasmania may be understood, and we observe that the *Australian Medical Journal*, in its issue of January 31st, 1920, says: "It will be our duty to the medical profession in the Commonwealth to remind its members from time to time of the reasons why the medical positions in the Government hospitals in Tasmania are undesirable positions to hold."

There still remain to be considered those portions of the

Act of 1919 which transfer from the Medical Council to the judicial courts the power to remove names from the register in the case of practitioners guilty of fraud, misdemeanour, or infamous conduct in a professional sense. As an act of partisan warfare the Tasmanian authorities have not hesitated to take away from the practitioners of the island the power of professional self-government—a power which, according to universal recognition, has been justly merited and justly used; a power which has played a significant part in maintaining a high standard of professional conduct, and a power which has at many junctures jealously safeguarded the interest of the general public. Whether the Tasmanian Legislature has in this matter exceeded the legitimate limits of its activity remains to be determined.

The position was brought to the notice of the Representative Body at Cambridge, when it unanimously instructed the Council to investigate the grave situation which has arisen in Tasmania. The Chairman of Council assured members in Tasmania that the Association would do all that was in its power to assist them.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

THE UNDUE OVERHANG MENACE.

AN important problem concerning the safety of road travel is presented by the motor char-à-banc with very wide coachwork and excessive overhang at the back. Medical men are complaining of "incidents" when encountering them in ever-increasing numbers all over the country. Commercial enterprises are locking up large sums of money in putting such vehicles on our high-roads and by-roads. Our relatively narrow main and secondary thoroughfares are not designed for them. Whether the matter be regarded from the point of view of the road user approaching or desiring to overtake such a vehicle, it is equally dangerous. One has only to follow an example along the road to realize that, with the continual deviation of our highways and byways, such char-à-bancs practically block up the whole road. Overhauling them, therefore, is attended with considerable risk, for when taking a corner the back sweeps threateningly. The Government departments concerned are tardy to act, though they are prompt to announce that they will inquire concerning the need to take action. Hardship would be caused if the Government were so deliberate in its procedure that commercial enterprises were to spend further sums of money in the acquisition of vehicles of a kind the use of which is manifestly undesirable and is subsequently to be prohibited. Some have suggested that these char-à-bancs should be confined to the main roads, and their use on the by-roads forbidden. Certainly in narrow thoroughfares and the lanes, as in Devonshire, where they are frequently encountered at this season, they are a positive menace. They occupy the entire road. Even if one has the luck to scrape by it is only by getting so much under the hedge that one's tyres get destroyed by loose stones, broken glass, and so on, and there is no foundation under the wheels on the side right against the hedge, consequently one's car is apt to become uncontrollable. The fact that the individual's vehicle is so much lighter than these char-à-bancs means that any damage they would sustain would be a mere nothing compared with that wrought to the car by its impact on such a massive and weighty structure. Orders placed with the manufacturers for such vehicles indicate that hundreds more are coming on to the road. Therefore it is impossible to judge the degree of danger of the situation from evidence on the highways at the moment. A solution of the problem short of one involving loss of capital is hard to devise.

ENTIRELY DIFFERENT CHASSIS NEEDED.

In connexion with such vehicles the law should compel the design of the chassis and, above all, of the coachwork to be submitted to the authorities, and require them to deal with these problems ahead of the event, as it were, not after a mistake has been committed and money has been spent on building undesirable types of machines. Some would say that the best solution is to make double-deckers of these machines, accommodating the given number of passengers on a much shorter and narrower body. This, however, is scarcely practical. The public appreciates travelling in an open vehicle without any roof over the head, and at a normal altitude above road level, so that there is no sense of topheaviness. The routes these vehicles travel in the course of taking sightseers about the country render it undesirable for the double-deck system to be employed. If, therefore, such machines are not to have excessive overhang, but are yet to have normal wheel bases, it follows that they cannot be run economically because they cannot carry enough passengers. An entirely different sort of chassis would be needed. Moreover, if the wheel base of, say, a 30 cwt. chassis were lengthened to accommodate half the number of passengers carried by a three-tonner, yet without undue overhang, still the lesser machine would be relatively difficult to manœuvre on the road, though nothing like as bad as the larger.

Of course local authorities are likely to take action in respect of their own districts; but this is never a satisfactory form of dealing with such an important matter as road traffic. We should approach all such business from the national, not from the local standpoint. We are likely to witness a campaign on the subject, for of course the traders affected are concerning themselves greatly in the matter already. They have on their side a popular cry, "co-operative motoring." But they have ranged against them pedestrians, pedal cyclists, those who use horse-hauled vehicles, and users of motor vehicles of the types and sizes for which our roads are suitable. If we are to have entirely different highways, built on the straight Continental principle, wide, with no hedges, whereby we should sacrifice a vast amount of scenic beauty, then there would be no cause for concern about the use of bulky char-à-bancs. As it is, there is no gainsaying that they render the road quite unsafe for other users, though doubtless they are secure enough from the point of those driving and travelling in them.

MOTOR FUEL DISTRIBUTION.

The Automobile Association has now got going, near Bath, the second of its demonstration roadside bulk storages for the supply of benzol to passing motorists. The scheme is exactly akin to that at Aldermaston, beyond Reading. Through the enterprise of the Anglo-American Oil Company it is being supplemented quite independently by the setting up at garages all over this country of a series of curbstone motor fuel supply pumps on the principle of delivering spirit stored in bulk below the surface of the ground direct into the tank of the motorist in quantities from a gallon to five gallons, thereby both eliminating the causes of dissatisfaction and decreasing the cost of fuel distribution in retail. The two-gallon can has always been expensive; difficult to keep clean; liable to leakage; fraught with the risk of condensation leading inevitably to complaint that the petrol is adulterated with water, and so on. The elimination of these sources of complaint and the reduction of distribution cost are therefore to be welcomed, particularly as the scheme has been carried out on a principle that does not prevent the motorist from knowing what brand of fuel he is buying. In the United States of America, where the curbstone supply system is common, motor spirit is not sold under any brand name. In this country, however, it is possible for the individual motorist to know exactly what brand of spirit he is buying. The curbstone pumps are quite sightly and absolutely accurate as to measurement. There is no risk of spilling; the evaporation that occurs is the least possible; and cleanliness is ensured in a way quite impossible when handling a painted can which probably has dust on its exterior, which takes quite a time to empty, and so forth. At night the curbstone supply pumps are easily recognizable. Each is surmounted by an electric lamp. On either side of the bulb in connexion with it there appears the brand name of the particular spirit supplied through the installation. It is a development long awaited in this country, and one which will be rapidly in general evidence.

CAR PRODUCTION AT LAST.

During the last two months I have visited a number of motor factories both in the north of England and the Midlands and am happy to be able to report, in brief, that we are now on big scale production in general. The only

cloud on the horizon is the objection of certain Sheffield workers to the three shift day principle as the only current means of enabling the immediate demand for steel to be coped with. Provided this does not interfere with the output of springs for certain makers, there is no question that at last the paralysis of production occasioned by the long series of strikes will have passed. Quantity production will make a very rapid and marked change in the situation alike in regard to supplies of vehicles and to prices. Big output has taken longer to get going than the work of small makers and assemblers owing to the sheer scale of such enterprise. For example, the hold up of the supply of one component, such as dynamos, springs, lamps, or what not, prevents the output of cars, though all the other parts be available. Further, a firm must have an enormous number of finished parts manufactured before it can begin assembling on what is called the track system, such as Wolesleys are using for their two four-cylinder models. I have seen at the works at Adderley Park, Birmingham, which occupy thirty-five acres, 1,000 complete sets of finished parts for the 15 h.p. four-cylinder model. The stores will always contain about that number, since it is impossible to assemble one car every two and a half hours on any other terms. The Angus-Sanderson, the Bean, and such like new style propositions are also beginning to come through very satisfactorily. Rover attained all but 100 per cent. long ago. Moreover, the vast factory they acquired at Birmingham to build the two-cylinder V type air-cooled engined light car, examples of which did so well in the London-Edinburgh and the London-Exeter trials, is now delivering. Now the big machine is set in operation, of course output will rise rapidly. Austin is another big manufacturer who is turning out well over 100 complete cars a week.

FUTURE PROVISION OF MEDICAL SERVICES.

MUNICIPAL REPRESENTATIVES' MEETING AT BRISTOL.

A MEETING of the Bath and Bristol Branch of the British Medical Association was held at Bristol on July 9th to consider the report of the Consultative Council. Previous to the meeting of the Branch, which was held in the Council Room of the University, a luncheon was given at the Royal West of England Academy by Dr. P. Watson-Williams, President of the Branch. Among those who accepted the invitation to meet Lord Dawson at the luncheon were the Lord Mayors of Bristol and Cardiff, representatives of the medical profession, of all the hospitals, the University and the Education Committee of Bristol, and the Bristol branch of the Red Cross, and visitors from neighbouring towns, representing principally the hospitals of their localities, including Cardiff, Exeter, Salisbury, Bath, Gloucester, Cheltenham, Hereford, Taunton, and Swindon, as well as the medical officers of health for Somerset, Wiltshire, Gloucestershire, and Bath rural.

Dr. WATSON-WILLIAMS, in proposing the toast of "The Consultative Council," said that it was the British Medical Association which initiated the movement culminating in the creation of a Ministry of Health. The West of England had an interest in that movement from the beginning. A suggestion made by Dr. Rumsey of Cheltenham at the annual meeting of the Association in Dublin in 1867 led to a joint committee being formed by the British Medical Association and the Social Science Association to pursue it further. In the following year a deputation from the British Medical Association, including representatives from Bristol, Bath, and Cheltenham, waited on certain members of the Government to ask for the setting up of a Royal Commission on the chaotic state of public health administration; and on June 6th, 1868, the BRITISH MEDICAL JOURNAL went further and urged "the appointment of a Minister of Health." Over and over again during the fifty years which followed the British Medical Association had reiterated its plea, until, in 1918, the Representative Meeting resolved to urge upon the Government the importance of establishing a Ministry of Health immediately. The recommendations of the Consultative Council aimed at supporting rather than supplanting existing organization. Their object was not the effacement of the present provisions but their co-ordination and evolution. The Council constituted an organized nexus between the Ministry and the medical profession, and was intended to be an official channel by which the profession could give direct expression of its views to the Ministry.

Lord DAWSON began his speech with a tribute to the Minister of Health. It was by no means a usual procedure for reports made by Councils to Ministers to be published for the open criticism of the public and of the profession most concerned. That such a course was followed in this instance was due to the liberal-mindedness of Dr. Addison. At the beginning of the eighteenth century, save for provision for paupers and perhaps a few religious institutions, there were no hospitals in the modern sense of the word. Soon, however, the great movement for the establishment of voluntary hospitals began, and Bristol was one of the first cities to rise to the occasion with the setting up of its Royal Infirmary. The interesting book in which Dr. Munro Smith had written the history of that great institution showed in a startling way how very modern in many respects was the hospital organization and even the amenities of the staff nearly two hundred years ago. Now that a new chapter was opening in the story of the hospitals of this country, the west of England was once more in the forefront. Already in the county of Gloucester a scheme had been laid down by the medical officer of health, Dr. Middleton Martin, whereby general practitioners were brought into relation with primary hospitals, which were staffed by themselves, and these primary hospitals were further brought into relation with secondary hospitals in the larger towns. Such a scheme, although it had not yet reached the stage of fruition, showed that here in the west the responsible people were thinking in terms of 1920. The provision for the health of the people in hospital or otherwise was demonstrably inadequate. It needed not to be swept away, but to be expanded and adjusted. Hospitals were inadequate because the population had grown more rapidly than they; also because the basis on which hospitals had been distributed was not determined by the needs of local populations, but by the chance existence of public spirit and benevolence in the district; again, recent progress in medicine demanded increased institutional treatment, which the present hospital system was not elastic enough to supply. It was not a case merely of providing more hospitals, but of the careful grading and linkage of hospitals. Another reason why change was imperative was to be found in the awakening of the public conscience on health matters; people had now a positive instead of merely a negative conception of health, and there was a sharper demand for preventive measures and for dealing with incipient disease. The general practitioner of the future must be more closely identified with preventive medicine and have access to necessary equipment. The present state of the hospitals proved how completely they had been outgrown. Many hospitals had waiting lists hundreds deep, and this was the more lamentable because these waiting lists comprised the people in whom disease was in its early stages and whom it was most important to cure from the point of view of the community. The disability from sickness was a great weight upon the nation. In 1916 sickness benefit in England, for men alone, amounted to nearly 3½ millions sterling, representing 6,800,000 weeks of sickness and consequent withdrawal from employment. The average annual loss due to sickness and disablement in the case of both sexes for the years 1914-16 worked out at 270,000 years, and in these estimates all light sickness (of shorter duration than four days) was excluded, as well as all maternity cases and cases in sanatoriums. If an adequate health organization existed these figures should at least be halved. The criticism had been levelled at the report of the Council that it would entail a huge expenditure on medical services at the time when the country was impoverished; but he and his colleagues recognized that great wars must be followed by strict economy, and that however desirable certain changes might be, it was necessary to wait for the full development and to do the best that could be done in the meantime. All that was asked at the moment was that stock be taken of the position, that a review should be made of what existed at present compared with what should exist, and that a scheme be devised in outline sufficient to reveal the plan according to which the health organization of the future should be shaped. There was already a patchwork of medical services—tuberculosis, venereal, and

so on—which had come each in response to an urgent demand, and not as the result of any ordered policy. The time had come to consider the whole position and decide upon the lines of development, and then set to work cautiously and tentatively to build up the fabric of a medical organization to approximate to national needs. The Consultative Council was quite prepared to find that such a fabric could only be set up bit by bit. Certain principles must be laid down, but they must be principles which should be capable of some immediate applications, and he hoped that one such application might be made in Bristol. The burden of the report was simply this: the provision of fabric and equipment, together with freedom of action for doctor and patient. It was fully recognized that the bulk of patients would be seen as heretofore in their own homes or at the practitioners' surgeries; but in each district there should be set up an institution which would contain the necessary equipment for the practitioner to complete and accelerate his work. The primary health centre would be a general practitioner clinic; only in the secondary health centre would the patient be transferred from the care of his own medical attendant. The primary centre was the most important part of the scheme at the moment. The secondary hospitals already existed; the primary hospitals were only represented at present by a few cottage hospitals inadequately equipped. The primary centre would provide equipment, while at the same time the pecuniary relation between doctor and patient would remain undisturbed. It was the more important that the laity and the medical profession should discuss this matter together in view of the tendency for certain infirmaries to be handed over to the municipalities. A municipalized service was one step forward to the nationalization of medicine, and that would be a disaster alike to the medical profession and to the public. This was not a time for criticism on the ground that the scheme would cost so many millions. What it was ultimately going to cost was of small importance. In 1870 many people might have been frightened had they then been told that the Education Act would by 1918 cost the country annually 33¼ millions; but no one at this time of day ventured to urge that less should be spent. The heavy expenditure which some forecasted on these new health arrangements would not come at once, and when it did come it would be more than met by the corresponding gain in national health and efficiency. He hoped that in the West Country, with its traditional munificence in hospital matters, two primary health centres might be set up as an experiment, one of them in the town and the other in the country. They would be of great service to their locality; they would relieve the strain on existing institutions, and they would have the high value of an example to the whole nation.

The LORD MAYOR OF BRISTOL, who proposed the health of representatives from neighbouring towns and counties, expressed his satisfaction that no great expenditure was immediately demanded, for in his position as head of a great municipality he was committed already to raising large sums of money for housing and other purposes. It had been estimated that the full scheme would cost 150 millions, of which 90 millions would be for medical men and 60 millions for nurses and establishment charges. His advice was to hasten slowly.

The LORD MAYOR OF CARDIFF, who responded to the toast, was less pessimistic than his brother magistrate. He had no fears with regard to the finance of the scheme, if only its provisions were assimilated over a course of years. Once the real meaning of the scheme was understood by the people in the industrial areas—particularly that it was not intended to interfere with the freedom of relation between doctor and patient—he was sure that they would lend a willing hand to make it a success. He hoped that the scheme would not be worked by existing local authorities; a separate *ad hoc* body should be created in the various districts. He looked to the scheme to mature in twenty years, by which time he believed the results would be magnificent.

The health of the Chairman was proposed by Mr. H. H. WILLS, President of the Bristol Royal Infirmary; Dr. WATSON-WILLIAMS, in acknowledging the compliment, questioned the accuracy of the estimate quoted by the Lord Mayor of Bristol, and said that he believed a sum of £100,000 would establish and equip two health centres, the one large and the other smaller.

THE MEETING OF THE BATH AND BRISTOL BRANCH.

The meeting of the Bath and Bristol Branch was attended by about one hundred members.

The President, Dr. P. WATSON-WILLIAMS, called on Lord DAWSON, who said that his desire was to elicit the opinion of the members present and to hear their criticisms, which he hoped would be constructive. The profession had an opportunity such as it had never enjoyed before in its history. It had been an individualistic calling, but there had been growing up in recent years a steadily increasing relation between the doctor and the community. It was for the profession now to give a lead to the nation on health matters. The public, in whose eyes the profession had gained a heightened esteem during the war, was prepared to listen to constructive proposals. The interim report of the Consultative Council was an attempt to systematize medical services. It endeavoured to make the preventive and curative sides of medicine meet in the general practitioner, who must be looked upon more and more as the guide in matters of health of the residents of his district. The director of the communal clinic of the primary health centre should be a man whose practice was in the district; his post should be a part-time one, paid on a time basis. This was the alternative to a whole-time salaried service. Training would be required for such a post, but this simply meant an extension of post-graduate instruction. As methods of investigation and treatment of disease became ever more complex the more did the insufficiency of the general practitioner's equipment become apparent. Nothing astonished him more as a consultant than the excellent work which was done by men under poor conditions. One of the vital parts of the organization now foreshadowed was the full participation of the general practitioner in the communal equipment available at the health centre. The ideal primary health centre would have a certain number of rooms available for the examination of patients; there would be *x* ray provision, particularly for screen examinations, also facilities for blood testing, and so on. The administration would charge a flat rate for the use of the equipment; the pecuniary relation between doctor and patient would remain undisturbed. In the larger centres there might be arrangements for physiotherapy and massage at reasonable charges. There would also be wards, including private wards for patients who could afford to pay for them, though the treatment would be the same, of course, in the private as in the general ward. The various communal clinics which were already growing up would be brought under the wing of the primary health centre. The primary health centre had then to be correlated with the secondary health centre in the shape of the existing hospital in the large town. Here those consultative services which were envisaged as part of the National Insurance scheme, but were held up by the war, would be available. The consultants would serve on a part-time basis and at scheduled rates, paid by the State. This would attract young consultants, to whom a certain assured income, however small, was a great help in the early days of practice. A great deal depended upon the maintenance of intellectual traffic between the primary and secondary health centres. The cost of the scheme had figured largely in the debate at the recent Representative Meeting, but it was not intended to pepper England with primary health centres right away. He would be content to see a dozen such centres established within a reasonable time.

Dr. J. MIDDLETON MARTIN (M.O.H. Gloucestershire) gave an account of the plan developed in that county. While it was more or less a simple matter to provide in the towns the special services now required, the matter was more complicated in country districts. In Bristol, for example, there were 13,000 persons to the square mile, while in Gloucestershire, not one of the most sparsely populated counties, there were only 268. It was out of the question to provide special services adequately for a scattered population on the same lines as for a compact population. It would be disastrous to the medical profession if continually branches of work were taken away from the general practitioner; nor would it be good for the community, because the preventive side of public health required a knowledge of the circumstances of the local community and the homes of the people, and who possessed

this knowledge to the same extent as the general practitioner? Therefore the aim in Gloucestershire had been to bring the general practitioner into relation with what Lord Dawson's report called primary health centres. The attempt was made to develop the present communal services in centres where the local practitioners could deal with the cases. It would be mainly an out-patient service, but a certain number of beds were also wanted. The stations would be of a very simple character, but capable of development. The direction of these centres was an important consideration. There had been complaint in the past that medical schemes were under lay direction. Medical matters were so technical that there must be medical direction of such services, and from a plan already in operation in Cheltenham he had conceived the idea of setting up a medical advisory committee, composed, in the case of Gloucestershire, of the general practitioners in charge of the out-stations and the consultants at the hospitals. All medical matters would be referred to that committee, which would be the governing body in medical matters. He did not suggest that all difficulties had been overcome, but sufficient advance had been made to prove the practicability of the idea. As for finance, the complete scheme was not too expensive to be carried out at the present time. The money had been found in Gloucestershire by pooling the sums available for the separate schemes, and in this way sufficient money was found without increasing the estimates.

Dr. MARCUS MILLIGAN (Bath) suggested that in each area, in association with the scheme, there should be formed a local guild of preventive medicine, or guild of health—a body whose function would be the collective study of all health matters, as well as health propaganda. All the general practitioners and consultants in the area would be included in the guild, as well as such persons as certifying factory surgeons, the public analyst, some representative of the education authority, members of the dental profession, and also veterinary surgeons.

Dr. H. C. BRISTOWE (Wrington, Somerset) spoke of the difficulties in the more sparsely populated rural areas, where the means of communication were mostly, not main roads or railways, but winding lanes, and the population scattered in small villages, none of them with more than 800 inhabitants, with hamlets and solitary houses in between. Practitioners engaged in work in these districts had not time to go a further five or ten miles to attend the primary health centres in a neighbouring town or larger village. He pleaded for smaller centres less ambitiously equipped and distributed more frequently in the sparsely populated districts.

Dr. R. H. NORGATE (Bristol) asked what provision it was proposed to make for chronic cases—the many people who could not earn their living and were a burden on their families.

Dr. WILLIAM GORDON (Exeter) said that his first acquaintance with the scheme inclined him to destructive criticism, but Lord Dawson by his advocacy and Dr. Middleton Martin by his practical experiment had established a case for the primary centre. They were countering the tendency to set up whole-time services, and were restoring to the general practitioner what he ought not to have lost; that was so much to the good. But the scheme as it stood on paper suggested that there was going to be undue interference from the secondary and teaching centres with the general practitioner. Mutual counsel and help there should be, but as little interference as possible. He hoped also that it would not be laid down that those in charge of these centres should keep elaborate routine records. This would interfere with the time available for the care of the patient. Whatever records were kept should be of the simplest kind. The expression "team work" was unfortunate; the profession in England had been made great by reason of its individuality, and the individualism of English medicine should be most sedulously preserved. After all, the highest human achievements were individual, not the work of a team. The speaker uttered a threefold warning: First, against hustling; secondly, against too much attention to what Labour people were thinking or were likely to think; thirdly, against the German tradition which magnified equipment at the expense of genius.

Dr. G. T. MYLES (Clifton), while admiring the report as a whole, thought that to express unqualified approval at this stage might mean the handing over by the profession of a blank cheque to the State. The success of the scheme depended entirely on the whole-hearted support of every section of the profession, and if very much new work was put upon the profession adequate remuneration must be given; with this subject the report did not deal. Lord Dawson had said elsewhere that he could himself drive a coach and four through his own scheme, but the speaker thought that it would be possible to drive through this scheme with its primary centres nothing less than a whole-time service State-controlled.

Dr. NEWMAN NEILD (Clifton) said that in all these schemes for the health of the people there were two possible methods. One was for the Government to put down the money first; but no great improvement in the health of the community had ever been gained by that method. The other was first to stimulate the enthusiasm of the profession so that it started doing pioneer work and left the matter of payment until later; that was the way in which advance in medicine had always been gained. He felt sure that Lord Dawson could be trusted to see that individualism had sufficient play, but some were afraid that certain lines of research and methods of treatment would be forced upon them whereby a free and untrammelled individualism would be lost.

Dr. L. S. LUCKHAM said that the city of Salisbury, with some 25,000 people, had a large neighbouring country district containing villages of 200 or 300 inhabitants. It was very difficult to establish primary health centres which would meet the case of such a district. The most valuable thing would be to combine the county hospital with the primary centre, the two working together. A great deal of hospital accommodation was taken up because homes were not suitable even for minor cases of illness.

Dr. E. J. MACLEAN (Cardiff), speaking as a member of the Welsh Consultative Council, said that the Councils were advisory to the Minister, and in no sense intended to replace the organized bodies of the profession. There was nothing in these Councils which would interfere with the status of the British Medical Association. So far from its functions being replaced, the Association should be strengthened. Many people thought that in view of the administrative power which the profession possessed some State control was necessary, and the maximum amount of it would be gained through a State medical service. The reports of the English and Welsh Consultative Councils in large part agreed, but that was not the result of collusion, for the Welsh Council had deliberately kept away from the English body in order that the problems might be approached with an unbiassed mind. The Welsh Council was composed not only of members of the medical profession, but of representatives of various public authorities, and thus the criticism of these representatives was available on the various points as they arose. The Principality was compact, and members of the Council had been able to visit various types of areas—purely rural areas, mixed areas, and densely populated industrial areas; certain principles had been applied to each of the three sets of conditions. The present stage was not one for much criticism, but there would come a time when very critical and contentious issues would have to be faced.

Dr. C. E. S. FLEMMING (Bradford-on-Avon) said that the profession had had placed within its grasp what it had been fighting for for years—namely, the opportunity to do its work properly. He was not sure that the fear that the independence of the individual practitioner was threatened was well grounded, but it was important that independence should be maintained, and equally so that they knew what was meant by independence. Independence from every sort of control was impossible in a country such as this; the profession acquiesced in intra-professional control. With regard to the relation of the general practitioner to preventive medicine, he would like to see every medical man given more powers approximating to those of a medical officer of health—powers to advise, report, and suggest—because no man was better able to make an effective medical officer of health than the general practitioner. There was nothing revolutionary in the primary health centre; it was the development of institutions and work already in existence.

The PRESIDENT conveyed to Lord Dawson the thanks of the Branch, and said that the views expressed might be summed up in the statement that the profession feared organization being imposed upon it from without, and

believed that the best way to meet the situation was to co-ordinate its work and prove its statesmanship.

Lord DAWSON, in reply, agreed that the Consultative Council in no way usurped the present means of communication of the views of the profession. At the same time it did offer a nexus between the profession and the Minister. The Council, although nominated by the Minister, was absolutely independent. There seemed to be a fear amongst some speakers of the danger of State service or State control. But where some had pointed to individualism he saw only intellectual anarchy. If by individualism was meant absence of all control, that was something which would not be good for the profession, and something which the community was not in the least likely to concede. Various instalments of State service had already been set up. The report of the Council was not making for State service; he regarded it as the sole alternative to a State service. He agreed with what had been said about the dangers of bureaucratic control, but he had found no responsible person in the Government or Ministry of Health eager for such control. There would be no cast-iron health service organized from Whitehall. The Ministry of Health would be the inspirer, controller, and co-ordinator—that was all. Subject to certain broad principles there would be considerable difference of detail in the various areas. Whatever the constitution of the local health authority, the medical profession as such must be represented upon it. A few broad-minded medical men would have an influence on such an authority far beyond their numbers. The majority of members must be elective, but in the co-opted minority the profession claimed to have a strong voice. He agreed that the profession must be adequately remunerated, but it would be a mistake to let it be supposed that pecuniary considerations occupied all their thoughts. He believed the general effect of a properly organized system would be to improve the pecuniary position of the men who practised under it, and he did not believe that in most instances it would increase their work, although it would add enormously to the interest of the work. He sympathized with the criticism which had come from sparsely populated areas. The question of subcentres and also of travelling dispensaries had been considered by the Council, but had not yet reached the stage of definite proposals. It must be remembered that the report was interim, and that the scheme was capable of indefinite adaptation. As for team work, it was simply untrue to say that the work of the medical man was purely individual. In the very simplest operation did not the anaesthetist play a part? Team work merely meant the pooling of the wisdom of a set of workers. He agreed that equipment was not everything; it was the spirit which underlay equipment that mattered, but there must be equipment to encourage the spirit. Finally, he deprecated the remarks of Dr. Gordon on the subject of Labour. He had found most intelligent views forthcoming from that quarter, and if a broad-minded scheme were hammered out, he was sure that Labour would offer unprejudiced assistance.

THE RENTS RESTRICTION ACT.

DURING the passage of the new Rents Restriction Act through Parliament a large number of amendments were suggested, some of which were accepted by the Government and others rejected. The Act finally received the Royal Assent on the day after the old restriction Acts had expired. It came into force on July 2nd, but was only printed at the end of last week. It extends the scope of the old Acts, and applies to all dwelling houses or parts of dwelling houses let as separate dwellings, of which the rateable value in the Metropolitan Police District is less than £105, in Scotland less than £90, and elsewhere less than £78. The rateable value of any house for this purpose is its pre-war rateable value, or, if there was then no assessment, the amount of the first assessment thereafter. Such a house is within the scope of the Act notwithstanding that the tenancy is one that includes board, attendance, and the hire of furniture, or that part of it is used for business, trade, or professional purposes, and once a house becomes subject to the Act it so remains to the end of the chapter. The Act, however, does not apply to houses of which the rent payable under any existing tenancy is less than two-thirds of its rateable value.

This, broadly, is the scope of the Act. Its provisions fall into two main heads—restrictions on increase of rent and on ejectment. No increase of rent on premises subject to the Act can be made except—

(*a*) Where the landlord has, since August, 1914, incurred expense in the improvement or structural alteration of premises he may demand further rent equal to 6 per cent. on the amount of the expense.

(*b*) Where the rent includes rates he may increase the rent by the amount by which the current exceed the pre-war rates.

(*c*) Where the landlord is liable to do all repairs he may put the rent up by 25 per cent., and if part of the repairs only by an amount to be determined, in default of agreement, by the county court, and

(*d*) In addition an all-round increase not exceeding 15 per cent. on the net rent is sanctioned, provided that, in the case of houses which were subject to the old Acts, not more than 5 per cent. may be added during the first year.

A great deal of doubt appears to exist as to whether any of these increases apply to houses which are held upon an existing agreement or lease. As to this the Act provides that no increase can be made "except in respect of a period during which, but for this Act, possession could be obtained by the landlord," and the Act is perfectly clear that the rent of premises held under lease or agreement cannot be increased unless, owing to some breach of covenant, the landlord becomes entitled to claim possession. Moreover, a tenant who is liable to have his rent increased under (*c*) and (*d*) above may apply to the county court to deprive the landlord of the rights given by the Act on the ground that the house is not reasonably fit for human habitation.

With regard to possession, no order for the possession of premises to which the Act applies can be obtained unless:

(*a*) The rent is due and unpaid or an obligation of tenancy broken.

(*b*) The tenant's conduct is a nuisance or annoyance to his neighbours, or he has been convicted of putting the house to an improper use, or has been guilty of waste.

(*c*) The tenant has given notice to quit and the landlord has contracted to sell the premises.

(*d*) The dwelling house is reasonably required for the landlord's own occupation and alternative suitable accommodation is available. But where the landlord is a man who has purchased the house after service in the forces the question of alternative accommodation does not arise, nor where the premises are required for occupation by a former tenant who gave up possession of them in order to serve in the forces.

Not only does the Act protect the interests of actual tenants, but also where a tenant dies intestate leaving a widow who resided with him at the date of his death, or where, there being no widow, members of the tenant's family so resided, such persons are entitled to the protection of the Act. This is a new feature.

There are two further important provisions with regard to premiums and furnished lettings: To require the payment of a fine or premium or the fixing of any pecuniary consideration as a condition of the grant, renewal, or continuance of a tenancy of premises to which the Act applies is illegal, and anyone doing so is liable to a fine not exceeding £100. Moreover, any such premium paid under an agreement made since March 25th, 1920, is recoverable. It remains to be seen how far this provision will put a stop to the premium or key money evil.

With regard to furnished houses, the Act provides that anyone who lets or has, before the Act came into force, let a furnished dwelling house at a rent which is proved to the county court to represent more than 25 per cent. over the normal pre-war profit is liable to refund the excess and to a penalty not exceeding £100. Here again it will be interesting to see how far this provision will assist the man who has been forced to pay extortionately for his furnished house at the seaside; but here, as in many other respects, the Act depends for its success upon the rigour with which it is enforced in the local county court.

Legislation of this type can only be regarded as an attempt to palliate the grave scandal of the housing shortage, which is presumably anticipated will not be overcome for several years, since the Act is expressed to remain in force until June 24th, 1923.

From the point of view of the legal profession, no doubt the Act will be even more fruitful in litigation than its predecessors.

British Medical Journal.

SATURDAY, JULY 17TH, 1920.

SOME PRINCIPLES AND AN EXPERIMENT.

IN responding to the invitation of the Annual Representative Meeting to speak on the Interim Report of the Medical Consultative Council, its chairman appealed to the profession to look at the position seriously. It was perhaps hardly necessary to make such an appeal, for the profession is profoundly interested. Of this our recent issues have afforded many instances, and again this week many pages of the JOURNAL are occupied by reports of events and discussions bearing more or less directly upon the many and difficult problems which arise. The discussion has centred round the Interim Report of the Medical Consultative Council, and Lord Dawson of Penn has not spared time or trouble in explaining to meetings of the profession the main features of the scheme. He has steadily maintained that the public, deeply moved by questions concerning the better treatment of disease, is looking to the medical profession for guidance. The main object of the Consultative Council's report is to afford the profession concrete proposals for its consideration and criticism. Already the air is being cleared in this way, and eventually the profession, having formed its own opinion on main principles, will be in a position to give the public and the legislature the guidance both recognize they need.

We will not attempt anything in the nature of a full investigation of the whole complex matter, but it seems desirable to call attention to a few recent events. It will be remembered that the Representative Meeting discussed the scheme of the report in a general way, and formulated certain principles, which will be submitted to the Divisions in the course of a memorandum the Ministry of Health Committee is engaged in preparing. The first principle adopted was that the establishment of primary health centres is the pivotal idea of the changes recommended in the report. The second was that any system for the prevention of disease, as well as for its treatment, should be based on domiciliary health service, and that general practitioners should be actively encouraged in the practice of both. The third was that the local health authority for each area should contain adequate representation of the medical profession in the area and of other persons or bodies engaged in public health work. The Representative Meeting also reiterated the opinion it had previously expressed that a whole-time salaried State service would be detrimental to the best interests of both the public and the medical profession.

The discussion at the meeting of the Bath and Bristol Branch on July 9th (page 83) was for several reasons particularly informing. One reason was that the area of the Branch includes a part of Gloucestershire, and the meeting had an opportunity of hearing from Dr. J. Middleton Martin, County Medical Officer, an exposition of the plan which has been developed there. In its general features it nearly resembles that of the Consultative Council, but there are differences traceable to special local conditions and financial considerations. Lord Dawson in this connexion emphasized the fact that the report of his Council was not final, and pointed out that the scheme it propounded, while intended to serve the profession as a guide to the principles governing the present situation, was capable of indefinite adaptation to special circumstances. The Gloucestershire scheme proposes the immediate establishment of thirty-three centres, varying very much in size and equipment. Out-patient departments are to be opened up at existing cottage hospitals and at a number of out-stations of the general hospitals. The county is divided into four hospital areas related to the general hospitals of Gloucester, Bristol, Stroud, and Cheltenham, the last-named area being subdivided into a home district dependent on the Cheltenham General Hospital and a Cirencester district, there being a cottage hospital of eighteen beds in that town. The scheme, Dr. Martin states, has been accepted by the county council, the general hospitals, and the general practitioners of the county. It will be administered by a board of management consisting of representatives of the county council and its committees, of the War Pensions Committees of the hospitals in Gloucester, Cheltenham, Stroud, and Bristol, and of the British Red Cross Society, a sum of £7,000 having been given by the Joint Council towards the total expenditure of £14,000, which it is estimated will be sufficient to set the scheme going. The annual expenditure is estimated to be £15,000, but as the hospitals and out-stations will be used for the communal services of the county this expenditure will, in large part at least, be met from the funds in the hands of the county council, including contributions from the Ministry of Pensions and the Ministry of Health.

Lord Dawson in his speeches at Bristol welcomed the Gloucestershire scheme, as, for two reasons, was to be expected. First, because Gloucestershire will provide a working test, in its application to mixed rural and industrial areas, of a scheme analogous to that of the Consultative Council; and secondly, because the utilization of existing cottage hospitals as primary centres is part of the scheme of the Consultative Council. We publish this week a letter from Dr. J. N. Marshall of Rothesay, showing that a system, evolved in the Island of Bute and based on the Rothesay Cottage Hospital, has worked thoroughly well for twenty-five years, gradually increasing its usefulness during that period. The hospital contains 13 beds; the average daily number of in-patients during 1918 was between eight and nine. Nearly all the patients pay something, varying from 7s. a week to 42s., the amount paid by an occupant of one of the three private wards. All practitioners in the island are members of the staff of the hospital. The fear has been expressed that the right of every practitioner to send cases to the hospital might occasionally cause difficulties owing to the limited in-patient accommodation, but Dr. Marshall states that in practice no such difficulties have arisen.

The report of the Consultative Council expressed the opinion that existing Poor Law infirmaries might be adapted to the purposes of primary centres, and here again events are marching in the direction suggested. In response to representations of the Sheffield Division (p. 93) one of the boards of guardians responsible for the area has agreed to place 100 beds in its hospital at the disposal of the public to relieve the congestion of the voluntary hospitals.

Many members of the profession fear that the scheme of the Consultative Council will lead on to a whole-time State medical service, which the British Medical Association has declared would be detrimental to the best interests of the public and of the medical profession. It is not to be denied that there are

grounds for the fear that an effort may be made to thrust such a service on the country against the wishes of the medical profession. There is much weight in Lord Dawson's contention—that if a whole-time salaried State service is to be avoided the profession must be prepared with an alternative. At present that offered by the report of the Consultative Council holds the field, and, as this issue of the JOURNAL shows, evidence is accumulating that the general body of the medical profession, both consultants and general practitioners, is disposed to look upon it with favour.

THE PRELIMINARY SCIENTIFIC SUBJECTS AND THE CURRICULUM.

THE number of the sections at the Annual Meeting of the Association varies from year to year; some are constant, others appear intermittently. That at this meeting there should be a section on medical education was doubly appropriate—first, because it was in accord with the *genius loci*, since Cambridge is a chief seat of sound learning, and secondly, because in these days of active reconstruction and, it is to be anticipated, of considerable change and reform, medical education is in all our thoughts. Sir George Newman, the President of the Section, in his introductory address, after dealing with the present problems of medical education generally, went on to consider some of the aspects of the special subject for discussion, "The place of preliminary science in the medical curriculum." That the five years' medical curriculum is overloaded all who took part in the debate admitted, and they agreed also that it is important to lighten without lengthening the course. But there was no suggestion of abandoning the teaching of chemistry, physics, and biology; on the contrary, their progressive importance was emphasized, but the speakers advocated improved methods of instruction and a closer correlation with the science and art of medicine.

Sir Ernest Rutherford and Professor Smithells declared that the instruction in physics and chemistry now given to medical students was very unsatisfactory. To provide a constructive policy it is necessary to ascertain the causes of the failure; the system of schedules—often of some antiquity—in these subjects seriously hampers the teacher, and by keeping him in a narrow furrow prevents any elasticity in his presentation of the subject; closely allied is the want of correlation between these preliminary scientific subjects on the one hand, and biology, physiology, pathology, and medical practice on the other hand. It has become most essential to link up the subjects, and so do away with their splendid isolation in watertight compartments. At present the average medical student regards his training in preliminary science as a labour to be surmounted and the subjects forgotten as soon as possible: usually the latter aim is successfully attained without any long delay; probably only a wise modification of the present methods of teaching these subjects is required in order to change the students' attitude. The consensus of opinion was generally in favour of school instruction in chemistry and physics, not with the object of getting them out of the way, but to enable further teaching and correlation with medicine to be more effectually carried out after registration as a student. The method of special classes for medical students adopted at Edinburgh by Professor Barger and by others elsewhere is a move in the right direction. In biology, which has even more intimate relations with medicine and pathology, the case for school instruction is not as strong as for the other two preliminary sciences, for, as Sir E. Rutherford pointed out, a reasonable acquaintance with physics and chemistry is a necessary preliminary; further, it is not so easily dealt with at secondary schools as in medical colleges, where it can be made both useful and interesting by correlation with parasitology and with other practical aspects of clinical work. Although at first sight it might appear that time would be saved and the curriculum lightened by banishing the preliminary subjects to the secondary schools, this is not the whole matter, for, as Professor Hickson points out, this step might tend to lower the standard of education, both special and general, and so medical education would suffer rather than gain.

Professor Keith, who, probably intentionally, rather overstated the case in declaring that the urgent problem was the education of the teachers rather than of the students, insisted on the importance of showing the students the practical applications of the preliminary sciences. In this he had many supporters, but he went further, and urged that the science teachers should not only be medically qualified, but should keep their clinical knowledge up to practice pitch. From experience gained as a pathological teacher Professor Lorrain Smith maintained that it was desirable to continue the instruction in what are called the preliminary sciences throughout the various stages of the curriculum by special biochemical and biophysical teachers, who would enable students to enter more thoroughly into metabolic and other problems.

The whole course of the debate showed that teachers of the preliminary subjects have become alive to the need for what may be called concentration in teaching. The opinion of the meeting as summarized was that chemistry and physics should be school subjects, and that evidence of a knowledge of them up to matriculation standard should be required of a medical student before registration as such. The recommendation that the earliest age at which a candidate should be allowed to register as a medical student should be 17 was perhaps a corollary.

THE FUNERAL SERVICE FOR GENERAL GORGAS AT ST. PAUL'S.

THE funeral service of Major-General William Crawford Gorgas, K.C.M.G., D.S.M., late Surgeon General of the United States army, was held on July 9th in St. Paul's Cathedral at noon. The coffin was borne from the Queen Alexandra Military Hospital at Millbank, where General Gorgas died, on a gun carriage of the Royal Horse Artillery. It was escorted by six military pall-bearers—Major-Generals Sir W. G. Macpherson, A. P. Blenkinsop, Sir G. B. Stanistreet, and Colonels O. L. Robinson, H. A. Hinge, and J. R. McMunn of the Army Medical Service. Headed by the band of the Coldstream Guards, the military escort, under the command of Brigadier-General Steele, marched along the Embankment towards the cathedral. General Gorgas's saddled charger, led by a dismounted Lifeguardsman, followed the gun carriage. During the progress of the funeral procession through the streets a salute of minute guns was fired in Hyde Park. On the steps at the west end of the cathedral the coffin was met by the Dean and cathedral clergy, who preceded it up the nave, the choir singing sentences from the burial service set to Croft's music. The pall-bearers in the cathedral were the naval and military attachés of the United States Embassy; Sir Anthony Bowlby, the newly elected President of the Royal College of Surgeons of England; Major General Sir Havelock Charles, Medical Adviser to the Secretary of State for India; Brigadier-General John Finney, of the United States Army Medical Service;

Lieut.-Colonel Sir James Kingston Fowler, M.D., representing the Colonial Office; Surgeon Rear Admiral Sir R. Hill, Medical Director-General of the Navy; Sir George Makins, late President of the Royal College of Surgeons; Dr. Charles Mayo, of Rochester, New York; Sir Norman Moore, President of the Royal College of Physicians of London; Sir Humphry Rolleston, President of the Royal Society of Medicine; Professor W. J. R. Simpson, Vice-President of the Society of Tropical Medicine and Hygiene, and Mr. Henry S. Wellcome. There was a very large congregation in the Cathedral, and under the dome stood official representatives of Royal persons, governments and institutions. The King was represented by Lieut.-General Sir John Goodwin, Director-General of the Army Medical Service; Queen Alexandra, by Colonel Sir Henry Streatfield; and the Duke of Connaught, Colonel-in-Chief of the Royal Army Medical Corps, by Colonel Sir Edward Worthington. The American Ambassador and Mrs. Davis attended, and the widow was accompanied by Major-General Noble, of the United States Army. His Majesty's Government was represented by Dr. Addison, Minister of Health, and the Army Council by Major-General Sir G. F. Ellison. There were representatives of the High Commissioners of the Dominions, and officials of the Admiralty, War Office, Foreign Office, and of South American Republics. There were also many naval and military officers from the United States and a large number of prominent Americans resident in London or visiting this country. Dr. Alexander Granville represented the Egyptian Government, Colonel Sir Lisle Webb the Ministry of Pensions, Lord Goschen the Medical Research Council, Sir Donald MacAlister the General Medical Council, Sir David Bruce the Royal Society, Dr. Alexander Blackhall-Morison the Royal College of Physicians of Edinburgh, and Professor Sir Archibald Garrod the University of Oxford. The President, to his regret, was unable to attend, but the British Medical Association was represented by the Chairman of Representative Meetings, the Treasurer, and the Medical Secretary, and the BRITISH MEDICAL JOURNAL by Dr. N. G. Horner (Assistant Editor). When the clergy and choir had reached their stalls, and the coffin, covered with the Stars and Stripes, had been placed on the catafalque under the dome, the choir sang the 90th Psalm. The lesson was read by the Dean of St. Paul's, from 1 Cor. xv. The following hymns were sung: "Nearer, my God, to Thee," "Lead, kindly Light," and the Republican battle hymn, "Mine eyes have seen the glory of the coming of the Lord," never, we suppose, heard in St. Paul's before. As the coffin was carried out to the West Door, the band of the 2nd Life Guards, stationed on the Chancel steps, played Chopin's *Marche Funèbre*, while all the congregation stood. The body was conveyed back to the hospital by motor and was taken thence by train to Southampton, for interment in the United States. The service was deeply impressive and will not be forgotten by any who were present. All felt that it was fitting that the highest honour this country could pay him should be paid to William Crawford Gorgas, the great medical administrator, who died in our midst.

EPSOM COLLEGE.

FOUNDER'S DAY will be celebrated at Epsom College on Tuesday next, July 20th. At 12.30 o'clock there will be a service in the College Chapel, and at 3.15 Dr. Christopher Addison, Minister of Health, will distribute the chief prizes and address the school. There will be refreshments in the college grounds immediately after the prize-giving. The sixty-seventh annual general meeting of the governors of the college was held on June 25th at the offices, 49, Bedford Square, London, W.C., with the treasurer, Sir Henry Morris, in the chair. The annual report of the council states that heavier expenditure will be necessary in the next few years to make good the deficiencies and defects in the buildings, the result of ordinary and prolonged wear and tear. Heavy additional expenses are incurred by the higher scale of salaries, by increases in the cost of board, and by the general rise in wages and other outgoings. The expenditure account shows a total deficit for the past year of £4,425. As a result of the greatly increased cost of maintaining the school the council has had to increase the school fees as from September next for all boys. For many years there has been a mortgage of £14,000 on the college lands and buildings; the interest on the mortgage is higher and a sum of £6,000 must be paid off at once. The council has decided to create mortgage debenture bonds of £100 at 5 per cent., on the security of the college land and buildings, up to the amount of £25,000. The council is confident that many friends of the college will take up these debentures, and thus show their appreciation of the good work carried out not only by the college itself as an educational institution, providing a first class education for the sons of medical men at low cost, but also by the Royal Medical Foundation attached to the college, in assisting necessitous medical men, their widows and families.

MEDICAL GRADUATE WORK IN LONDON.

A CONSIDERABLE amount of post-graduate work has been arranged in London during the summer months, and within the next few weeks additional courses are likely to be announced. At the National Hospital for Diseases of the Heart a course extending over two weeks will begin on Monday, July 19th. Work will begin at 10 a.m., the first session being devoted to practical instruction in graphic methods (including the polygraph and electrocardiograph); at 11.15 laboratory and clinical demonstrations will be given illustrating the physiology, pathology, and therapeutics of the heart and circulation; clinical work in the wards and out-patient department will occupy the afternoon, and a lecture will be delivered at 5 p.m. The number of entries for this course is limited, and it is now almost complete. The North-East London Post-Graduate College (Prince of Wales's Hospital, Tottenham) has arranged, in conjunction with the Fellowship of Medicine, an intensive course during the same period covering the various departments of medicine and surgery. Demonstrations will be given each day at 10.30 a.m., 11.45 a.m., 2 p.m., and 3 p.m. A lecture (open to all qualified practitioners without fee) will be delivered each day at 4.30 p.m. Luncheon will be obtainable in the neighbourhood of the hospital, and tea will be provided at 4 p.m. Courses of lectures are now being given at the London Hospital and the Cancer Hospital. At the former Dr. Theodore Thompson and Dr. George Riddoch are giving a course on neurology on the Tuesdays and Wednesdays in July and August at 2 p.m., ending on August 18th. At the Cancer Hospital a course of clinical lectures on the diagnosis and treatment of cancer is being given on the Tuesdays and Fridays in July and August at 4.30 p.m. Mr. Victor Bonney has resumed his "Talks on Gynaecology" at the Middlesex Hospital each Saturday morning at 10.30 during July and August. The Wednesday afternoon lectures at Queen Charlotte's Hospital come to an end on July 28th. For September a course of proctology is being arranged at St. Mark's Hospital, City Road, and the postponed course on spa treatment will open at Bath on September 20th. The *Bulletin* of the Fellowship of Medicine contains the detailed syllabus of these courses, together with an extensive list of daily hospital appointments open to members of the Fellowship of Medicine. Graduates who intend to devote any portion of their time to study in London are invited to communicate with the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1, stating the class of work in which they are most interested.

PRESENTATION TO SIR JOHN MACALISTER.

THE presentation of a testimonial to Sir John MacAlister, subscribed by his numerous friends, took place at the house of the Royal Society of Medicine on July 7th, when Sir Humphry Rolleston, as the last act of his presidency, handed over to Sir John a cheque for £711. Sir Humphry said that those who had subscribed to the testimonial came from a far wider circle than the Fellowship of the Society; at the same time it was fitting that the ceremony should take place at the Society's house, for it was impossible to think of Sir John MacAlister without thinking of the Royal Society of Medicine. His friends knew him as a most unselfish and devoted comrade, capable not only of warm sympathy, but of promptitude, even sometimes of impetuosity, in rendering help. The late Sir William Osler had most happily described him when he said that he was "the man who poked the fire." The treasurer of the testimonial fund, Sir Arbuthnot Lane, joined in Sir John's praises, laying particular stress on his patience in the mastery of detail; and the Secretary, Mr. Percy Dunn, indicated from how far afield many of the contributions had come; there were subscribers in Bombay, Calcutta, Adelaide, Mombasa, and various cities in the United States, and one contribution from Peking. Sir John MacAlister, after expressing his thanks for the gift, said that he had never served the Society for money. As a youth he chose medicine for the love of it, but circumstances foiled his ambition, and, largely through the help of Sir Clifford Allbutt, he secured the post he had most coveted—that of librarian of the old Society in Berners Street. There he had hoped still to find opportunity for the pursuit of his medical studies, but as he became more and more absorbed in the Society's affairs and saw the Society to be an entity capable of great expansion, the idea of a medical career for himself was finally abandoned. After a grateful tribute to his staff, he thanked various officers of the Society, past and present, in particular the retiring president, who, he said, had taken a more intimate and affectionate interest in the work of the Society than any president in his experience. When the Wimpole Street building was erected a duplicate set of keys was made for the president's benefit, but they had hung listless on their ring until Sir Humphry Rolleston's tenure of office, when they had been used, and used constantly.

A PIONEER IN AMERICAN NAVAL MEDICINE.

IN an article[1] based on much literary research, especially into many "Officers' Letters" scattered through the volumes covering the years 1809 to 1848 in the library of the United States Navy Department, Captain F. L. Pleadwell, M.C., U.S.N., gives a biography of William Paul Crillon Barton (1786–1856), whose influence on the medical and sanitary reform in the American Navy recalls that of Sir Gilbert Blane at a rather early date in the Royal Navy. Barton came of a literary family, and, as a contemporary writer remarks, "his forebears were eminently qualified to infuse into his mind the rudiments of knowledge and the principles of virtue." His brother, John Rhea Barton, was a distinguished surgeon and, as the inventor of Barton's bandage, is still remembered; his uncle, Benjamin Smith Barton, was professor of botany and in later years succeeded Benjamin Rush as professor of the theory and practice of medicine in the University of Pennsylvania. Called William after his father, the future naval surgeon received a classical education at Princeton, where, like the other members of his class, he assumed the name of some celebrated character—in his case that of Count Paul Crillon—whose initials he retained throughout his life. After qualifying in 1808, he practised for a year in Philadelphia, and then entered the American navy, in which he distinguished himself by his professional skill, and particularly by his bold and fearless advocacy of necessary reforms in the medical department and of improvement in the status of the naval surgeon. During his periods of shore duty he was most active, publishing in 1814 his *Treatise containing a Plan for the Internal Organization and Government of Marine Hospitals*, and in 1830 another entitled *Hints for Naval Officers Cruising in the West Indies*. In 1815 he succeeded his uncle as professor of botany in the University of Pennsylvania, and on this subject also he wrote. When the Bureau of Medicine and Surgery in the Navy Department was instituted he became the first incumbent (1842–4), and in this capacity corrected numerous abuses—not, however, without encountering opposition and unpopularity, so that after eighteen months he expressed his "earnest wish to retire from the scene of unavailing efforts." He opposed the introduction of the title "surgeon-general," which would otherwise have been his, and it was not brought in until 1869. He was a remarkable personality; he was vehement in manner, and a vein of irony and sarcasm was perceptible in almost everything he said; he had the eccentricity of genius, which was prominent in his dress. He was an accomplished performer on the violin and flute, and a vigorous advocate of temperance, and in his *Hints for Naval Officers* delivered himself as follows: "A brandy-drinking physician! I cannot conceive of such a thing. I will not admit it to be possible. I trust that there are none in the navy." Perhaps it was more than a coincidence that soon after this expression of opinion he was directed to hold himself in readiness for duty in a ship called the *Brandywine*.

[1] *The Military Surgeon*. Washington, D.C., 1920, xlvi, 241–281.

A MEETING of the Medical Board of the International Red Cross League was held in Geneva during the first days of this month. It was attended, among others, by Sir George Newman, Medical Officer to the Ministry of Health and the Board of Education, and by Sir Walter Fletcher, Secretary to the Medical Research Council.

DR. RICHARD A. BERRY, Professor of Anatomy in the University of Melbourne, has been appointed Stewart Lecturer for 1921 in that university. The lectureship was founded by the late Dr. Stewart to provide for the delivery of three lectures in Melbourne on some subject of national importance to Australia. Professor Berry has recently, in conjunction with Mr. S. D. Porteus, Director of the Research Laboratory of the Training School at Vineland, New Jersey, issued a report describing a practical method for the diagnosis of mental deficiency and other forms of social inefficiency. Professor Berry will devote his Stewart course to this subject.

THE Honorary Fellowship of the Royal College of Surgeons of England was, on July 8th, formally conferred on four distinguished foreign surgeons: Professor A. Depage of Brussels, M. Pierre Duval of Paris, Professor John Finney of Johns Hopkins University, Baltimore, and Dr. Charles H. Mayo of Rochester, Minnesota, whose brother, Dr. William Mayo, received the same honour in 1913. The admission of the four new honorary Fellows was the first official act of the new President of the College, Sir Anthony Bowlby, who had been elected to the office at the meeting of the council on that day. Sir Anthony Bowlby, K.C.B., K.C.M.G., K.C.V.O., became a Fellow in 1881, and, after the retiring president, Sir George Makins, is the senior member of the council, having held office since 1904. He was re-elected for a further period of five years at the head of the poll on July 2nd. Last year he was appointed senior vice-president of the College, and retired after long service from the post of surgeon to St. Bartholomew's Hospital. He was Bradshaw Lecturer in 1915 and Hunterian Orator in 1919.

ANNUAL MEETING NOTES.

SECTION OF SURGERY.

A RUNNING account of the first two days' proceedings was given in our last issue. Both the scientific and general interest of the Section continued to be well maintained on the third day of meeting, Friday, July 2nd. Under the chairmanship of Mr. Harry Littlewood, C.M.G., a vice-president of the Section, the morning sitting was devoted to a discussion on the end-results of peripheral nerve injuries treated by operation. In leading, Sir William Thorburn presented some general considerations and summed up the recent work on the subject. Apart from strict anatomical continuity, at which they had always to aim, a good functional result required that a sufficient number of axons should enter a sufficient number of peripheral sheaths capable of leading them in the right direction, and that meant that motor axons should join with motor axis cylinders and sensory with sensory. They were faced with the question of shunting off axons into peripheral channels: macroscopic, as when the proximal end of the hypoglossal was attached to the distal end of the facial, and microscopic when rotation of the approximated ends of a known nerve occurred. They had, further, after attaining a good anatomical and a satisfactory functional result, to look to the economic value of the end-result. Economically the limb may be of little value on account of psychical conditions, secondary muscular and joint changes, and on account of a condition he had called local ataxia, where visual control was required by the patient for the true function to be performed. He thought from a study of published papers that a perfect neurological result was rarely if ever attained; good results were obtained in somewhere between one-third and two-thirds of all cases. Nerve grafting he regarded as only a last resort, and he was more than dubious of its value. Nerves supplying large muscles of homogeneous type (musculo-spiral) recovered better and more quickly than nerves whose distribution was small and complicated (ulnar). Time required for recovery was very great; the down-growth of axons was regarded as at the rate of 1 mm. per day, and it was not wise to take too rosy a view of these cases. Mr. Percy Sargent dealt with some practical details. In his view direct end-to-end suture was the only practical means of restoring conductivity. The criteria of good "late-results," a term preferable to "end-results," ought to be specified. Satisfactory evidences of nerve regeneration might be found in a limb more or less functionless, and apparently good functional results might be obtained in a limb upon which the patient had concentrated all his powers, making it perform what after all were only "trick movements." Sensibility as well as muscular power must be restored for the regaining of useful function, and this restoration varied in importance with different nerves. In this connexion he wished to emphasize the importance of re-education, and pointed out how better standards of comparison must be instituted. A second group of cases requiring operative treatment was concerned with morbid conditions of an injured nerve evidenced by nutritional and vasomotor changes in its area of distribution and by causalgia. In both conditions he advocated treatment by operation, commending alcohol injections in causalgia. An animated and informing discussion was carried on by Miss Forrester-Brown, who narrated some results obtained by Sir Harold Stiles; Mr. Copland of Leeds; Mr. Joyce of Reading, an advocate of a method of double lateral implantation of the wide-apart cut ends of a nerve; Mr. Bristow of Shepherd's Bush; Mr. Naughton Dunn of Birmingham. Dr. L. E. Shore, of Cambridge, pointed out that perfect anatomical end-to-end suture was impossible, there was constant twisting and changing of position of axis cylinders in their downward progress. It was thought that there were two classes of motor nerves, one for mass movements, as the musculo-spiral, and one for detail muscular movements, as the median. The Chairman contributed a few words to the discussion, and the openers replied. Mr. Herbert Tilley followed with an able paper on the inflammatory lesions of the nasal accessory sinuses regarded from the standpoint of the physician and surgeon. The paper was illustrated with many lantern slides, and amply supplemented by a demonstration in the afternoon on endoscopy of the lower air passages and gullet, of which an account was given last week at page 49. Other demonstrations on this afternoon were given in the Pharmacological Laboratory by Mr. Arthur Cooke and Dr. J. W. McNee on the methods of blood transfusion. Major M. Sinclair completed his demonstrations on fractures and their treatment, which were so successful on the two previous afternoons, by a lantern exhibition showing the results obtained by his methods. This was enthusiastically received by a good audience, who, on the invitation of Professor Griffiths, accorded Major Sinclair hearty thanks. Sir George Makins, at the close of the morning session, expressed the gratitude of the members of the Surgical Section to the Secretaries for their enterprise and able management, commending the introduction of the papers by Mr. Kidd, Lieut.-Colonel Elliot, and Mr. Tilley on subjects which though not actually within the sphere of general surgery, were intimately related to it. The afternoon demonstrations were a new feature of the meeting; the large and keen audiences were a clear indication of the high value placed upon the efforts of the demonstrators, Major Sinclair and Messrs. Cole, Gillies, Cooke, McNee and Tilley, whose work during the war was so widely known, and whom very many members of the Section were desirous of meeting personally.

THE POPULAR LECTURE.

THE Popular Lecture of the British Medical Association was delivered in the Examination Hall at Cambridge on Friday of the week of the Annual Meeting by Dr. G. S. Graham-Smith, F.R.S., Lecturer in Hygiene in the University of Cambridge. He dealt summarily in three-quarters of an hour with the anatomy, life-history, and habits of flies. Sir James Barr was in the chair, and in introducing the lecturer alluded to the extraordinary fly-infestation which was experienced during the Mesopotamian campaign, when flies were actually eaten in multitudes because they could not be brushed off the food. Dr. Graham-Smith touched on the relations between common flies and disease, especially the guilt of the house-fly in conveying summer diarrhoea, and his admirable lantern views enforced the moral, if any such enforcement were necessary. From the point of view of disease, he said, the fly population might be divided into two categories—namely, flies which disseminated disease by the fouling of food through their faeces or vomit, and the flies which introduced the germs of disease into the human organism by biting. He confined himself almost entirely to flies of the former description, of which the common house-fly, *Musca domestica*, was the most familiar. He included, however, other species, such as bluebottles and greenbottles, also the stable-fly, *Stomoxys calcitrans*, which, unlike the house-fly, was able to bite, and was often mistaken by those whom it attacked for an ill-natured house-fly which had developed a sort of insectile rabies. By means of some good photomicrographs and drawings shown through the lantern, Dr. Graham-Smith described in detail the various parts of the fly's anatomy, its suctorial mouth and elastic abdomen, and then took his audience through the four stages of its history—the egg, the larva, and the pupa, followed by the emergence of the perfect fly. A good deal was also said on the subject of flies as parasites and the parasites of flies. Not only did mites infest certain flies, but it appeared that the eggs, larvae, and pupae, as well as the finished product, might all have to stand host to unsolicited guests—another instance of the bewildering arrangement whereby "the little fleas had lesser fleas, and so *ad infinitum*." The unpleasant habits of the fly, particularly in breeding on slimy refuse, and also regurgitating its food—the vomit marks of the fly were found in certain circumstances to be more than twice as numerous as the marks of the faeces—were touched upon, and altogether the fly was represented as a creature for which little that was good could be said. But Dr. Graham-Smith concluded his lecture by reading a whimsical account of the supposed observations of a scientifically minded fly on the curious actions and manners of a human being who got in its way, which suggested that the fly might have something to say for itself. A vote of thanks was warmly accorded to the lecturer.

Medical Notes in Parliament.

Tetanus in War.

IN reply to Mr. Robert Young, on July 6th, Mr. Churchill said that six cases of tetanus occurred among other ranks wounded or injured in action during the South African war, or an attack rate of 0.28 per 1,000, and three deaths, or a death rate of 0.14 per 1,000. There were no cases of tetanus among officers. He was unable to give statistics with regard to the Russo-Japanese, Crimean, and Franco-Prussian wars. On July 8th Mr. Waterson inquired as to the incidence of tetanus in the recent war as regards wounded men brought to England, wounded men nursed in France or other parts of the Continent, wounded men in Mesopotamia, and wounded men in Gallipoli and Egypt and other theatres of war, giving the attack rate and the death rate per 1,000 in each case. Mr. Churchill regretted that complete statistics were not yet available. For the period from August, 1914, to December, 1918, the number of cases of, and deaths from, tetanus reported in France, Belgium, and the United Kingdom among the troops wounded in France and Belgium gave approximately an attack rate of 1.22 per 1,000 and a death rate of 0.49 per 1,000. He had no figures at present regarding the incidence of tetanus in the other theatres of war mentioned, but was informed that very few cases occurred in any of them.

Future of the Indian Medical Service.—Sir W. Joynson-Hicks asked, on July 12th, whether the Secretary for India had reached a decision as to the future of the Indian Medical Service. Mr. Montagu replied he would be in a position to decide on this question and to make an announcement when he received the Government of India's recommendations on the Reports of the Army in India Committee—in so far as it dealt with military medical organization in India—and of Sir Verney Lovett's Committee on Medical Services in India. The two Reports had to be considered together. Copies of the Lovett Committee's Report for publication were on their way to England, and he hoped to publish both reports simultaneously, very shortly. Meanwhile, copies of the report of Lord Esher's Committee had been sent to the Government of India, which would forward its views on both reports as soon as possible.

Colonial Medical Service.—In reply to Lieut.-Colonel Fremantle, on June 30th, Lieut.-Colonel Amery, Under-Secretary Colonial Office, said that the Committee on the Colonial Medical Service had not yet presented its report, but he believed it was being printed at this moment.

Sickness Insurance.—Asked by Mr. Charles Edwards, on July 1st, whether he was disposed to accept an amendment of the National Insurance Act so as to give the same sickness benefits to persons over 70 as for those under that age, Dr. Addison declared himself unable to take up such a suggestion. The extension of sickness and disablement benefits to persons over 70 would necessitate an increase in the contributions payable by all insured persons throughout the whole period of their insurance, and the only persons who would derive any advantage from such increase would be the very small proportion who continued in employment up to or beyond the age of 70. The extension would also involve great administrative difficulties, as, in the case of the aged, the incapacity for work through sickness was not distinguishable from infirmity due merely to old age. The experience of friendly societies had shown that the risk was not one which could be properly covered by insurance. Provision for the needs of aged persons was already made under the old age pensions scheme.

Lincoln Friendly Societies' Dispensaries.—In reply to a question by Mr. A. T. Davies, on June 29th, as to why the war allowances were being withheld from medical officers of the Lincoln Friendly Societies' Dispensaries, the Minister of Health said that war allowances were being paid to approved medical institutions which complied with the condition that the accounts and particulars of membership should be furnished to establish the case for a grant and to enable the amount of the grant to be measured. The instructions issued on October 15th, 1913, were not relevant to the case. If the Lincoln Friendly Societies' Dispensaries furnished the particulars required, the case for a grant would be fully and impartially considered.

Cost of National Insurance.—Replying to Mr. R. Young, Dr. Addison, on July 12th, said that the total cost of National Health Insurance from its inception to December 31st, 1919, was in round figures £190,000,000; the amounts paid in benefits and administration were £99,000,000 and £25,000,000 respectively, leaving a balance in reserve at that date of £66,000,000.

General Nursing Council.—Mr. Alfred Davies asked the Minister of Health, on July 7th, whether he appointed the present Chairman of the General Nursing Council set up under the Nurses' Registration Act, without consultation with the members of the Council. Mr. R. Richardson asked whether the Chairman of the General Nursing Council had neither experience nor knowledge of medical or nursing matters to enable him to understand and to guide the Council in its deliberations on professional subjects. Dr. Addison replied that the Council had to prepare statutory rules and to perform judicial functions in relation to the removal of unfit persons from the Register. In view of the amount of quasi-legal work involved, he thought it necessary to appoint a chairman with legal experience, and he was fortunate in persuading Mr. Priestley, K.C., to accept the post. He was not under any obligation to consult the members of the Council, and he took full responsibility for the appointment. There was no foundation for the suggestion that the Council had been hampered; on the contrary, it continued to make rapid progress.

Income Tax of Residents Abroad.—In Committee on the Finance Bill, on July 7th, on the clause which, while broadly excluding from relief in respect of income tax persons living abroad, makes an exception in favour of an income taxpayer "resident abroad for the sake of health," Mr. Godfrey Locker-Lampson moved an amendment to the effect that the exception should apply equally to a husband living abroad on account of his wife's health. After some discussion the amendment was withdrawn on a promise from Mr. Baldwin that the matter should be looked into before the bill was taken on Report.

Ministry of Pensions.—Since April 1st the number of disabled ex-service men employed on the temporary staff of the Ministry of Pensions has been increased from 3,465 to 3,954. The total number of ex-service men now employed is 10,235; the number of women employed is 14,202; of the latter number at least 5,000 are engaged on such work as cleaning. The total staff of the Ministry of Pensions is now 25,070, which is an increase of 16,509 in little more than a year. Mr. Chamberlain states, however, that he is satisfied that every effort has been made to keep the number at the lowest limit. During the last year, the number of persons drawing benefit has almost doubled, and various institutions and hospitals have been transferred to the management of the Ministry. He is assured that the time is in sight when the volume of work will automatically begin to decline and the staff be proportionately reduced.

Slum Area Conditions.—In reply to Lieut.-Colonel Fremantle, on June 30th, the Minister of Health, after mentioning that the interim report of the Slum Areas Committee dealing particularly with the London problem had been published, said that it was unfortunately not practicable, save in so far as reconstruction was possible without material displacement of the population, to deal on a large scale with slum areas, except in the preparation of schemes, until much more progress had been made in providing new houses. This was an additional reason why it was important that the London County Council should press forward their big housing schemes with all dispatch.

The Definition of Total Disablement.—In reply to Mr. R. Young, on July 1st, who asked whether the term "totally disabled" was merely a pension classification or whether it meant totally unable to follow any trade or profession, Mr. Macpherson said that the award of a pension at the maximum degree of disablement did not necessarily mean that the pensioner was totally unable to follow any trade or profession. The assessment of a disablement pension was based on the medical aspect of the man's disability. He could not state the number of men in receipt of maximum pensions who were in employment. Pensions awarded on the basis of 100 per cent. disablement were in many cases reduced when a fresh medical examination revealed an improvement in the man's physical condition.

Hospitals for Pensioners.—Sir H. Harris asked whether the 3rd London General Hospital, which was to be closed on July 31st, had been offered to the Ministry of Pensions and declined, and whether he could state the number of war pensioners now receiving treatment in civil hospitals. Mr. Macpherson replied that the hospital mentioned had been offered to the Ministry; but the accommodation was considered less suitable for the requirements of the Ministry than that of another hospital, the transfer of which was being considered. The number of war pensioners now receiving treatment in civil hospitals was approximately 15,000.

Small-pox in Glasgow.—In reply to Mr. Waterson, on July 7th, the Solicitor-General for Scotland (Mr. C. D. Murray) stated that the number of cases of small-pox in Glasgow this year up to July 7th was 306.

Answers in Brief.

The Mount Pleasant Hospital, Chepstow, costing £110,000, has been transferred to the Ministry of Pensions.

The approximate number of missing officers and other ranks of the Regular Army and Territorial Force in all theatres of war respecting whom no definite information has been received, and whose deaths have now been officially accepted upon lapse of time, is 99,868.

The number of licences granted on June 1st for the sale of Grade A milk (certified) was eight in England and Wales, and for the sale of Grade A milk 12 in England and Wales and 11 in Scotland. No licences for the sale of certified milk were granted in Scotland.

Dr. Addison states that steps have been taken to bring before local authorities the utility of army huts and hostels for temporary housing purposes. The number so far acquired for conversion will provide accommodation for over 3,000 families.

The question of special grants to naval officers to meet the cost of providing new peace time uniforms is under consideration. Such grants have already been made to army officers.

The head quarters school of army sanitation is now at Blackpool, and is to be established permanently at Aldershot.

The Ministry of Transport states that the question of speed limits for motor vehicles is included within the terms of reference of the Departmental Committee on the Taxation and Regulation of Road Vehicles; legislation on the subject would not be attempted until after it had reported.

England and Wales.

RELIEF FOR THE SHORTAGE OF HOSPITAL BEDS IN SHEFFIELD.

THE serious shortage of beds in the Sheffield hospitals has induced the Sheffield Division of the British Medical Association to approach the two boards of guardians in the area with the suggestion that some beds in their institutions might, in order to meet the emergency, be used temporarily for other than Poor Law patients. We are indebted to Dr. Henry Brown, the Honorary Secretary of the Division, for an opportunity of reading the replies received. The reply of the Sheffield Union is to the effect that its hospital is fully occupied. It contains 734 beds (men 339, women 215, children 180), but one of the children's wards, containing 25 cots, is in the hands of the painters, and a block is closed for lack of nursing staff, so that there are only 678 beds and cots available. On a recent date there were 160 beds and cots empty, but of the adult beds 24 are reserved for influenza and phthisis. Of the cots some are reserved for newborn and suckling babies, for children suffering from syphilis or other contagious diseases, and others for influenza and whooping-cough; there has been difficulty in separating cases of infectious diseases. The net result is that at present the margin of beds vacant is, in the opinion of the medical superintendent, Dr. J. Clarke, too small to make it possible for the Sheffield guardians to offer beds for the purpose desired.

The Ecclesall Hospital, on the other hand, is in a position to offer 100 beds for other than distinct Poor Law cases—40 surgical and 40 medical, divided between the sexes in equal portions, and 20 for children. The hospital contains 400 beds, and has a well-equipped operating theatre and *x*-ray department. It has two medical officers and a radiologist; the medical staff is quite prepared to deal with an increase of surgical work. There are also two consultants to the hospital, whose services can be obtained when necessary. In the ordinary way the method of admission to the hospital must follow a specified course. The district medical officer visits the patient, and certifies that he is apparently in poor circumstances, and should be admitted to hospital. His certificate is handed to the relieving officer, who, after obtaining particulars of the patient's means and family, gives an order for admission. The guardians have found that persons have objected to inquiries into their circumstances and family concerns to so great an extent that, rather than enter a Poor Law hospital, they have preferred to forego hospital treatment altogether. The duty of the guardians is to collect from the patients or their relatives as much as they can afford towards the cost of maintenance, but no distinction in treatment is made between persons who can afford to pay the full cost, or less, or nothing. The guardians have now, in order to meet the present emergency, decided to forego these formalities, and have notified that if any medical man attending a patient in the union's district considers that his patient should have hospital treatment, and notifies the relieving officer of certain particulars it is necessary for the guardians to have, the relieving officer will immediately arrange for the admission of the patient. If the patient is able and willing to pay 24s. 6d. a week towards the cost of his maintenance, it will not be necessary to make any inquiries into his means. If he is not able to pay that amount, the guardians will be obliged to ask further questions as to what he or his relatives can afford to pay. The medical officer of the hospital will have authority to admit cases of emergency at once, and an ambulance will be available.

Scotland.

NEW BUILDINGS OF EDINBURGH UNIVERSITY.

THE KING, who was accompanied by the Queen and Princess Mary, laid the foundation stone of the new buildings at Liberton for the University of Edinburgh on July 6th. In his reply to an address by the Vice-Chancellor, the King congratulated the University on making timely provision for an even greater improvement in scientific research and education. Afterwards the Queen received the honorary degree of LL.D. and signed the album of honorary graduates.

HONORARY DEGREES AT EDINBURGH.

The University of Edinburgh, on July 8th, honoured certain of its Emeritus Professors by conferring on them the honorary degree of LL.D. In presenting Professor Francis M. Caird, the Dean of the Faculty of Law said that his name

has long been a household word for supreme skill in all branches of surgery, systematic and operative, and for clinical teaching of surpassing clearness and incisiveness. In the true spirit of science he has domesticated among us many Continental improvements in his art, neither offended by their novelty, nor prejudiced by their foreign origin. His great accomplishment as a surgeon and his lovable qualities as a man are eminently deserving of the best honour the University has to offer.

In presenting Professor William Russell, the Dean said:

Professor Russell's long and distinguished teaching record, first in the extra-mural school and then in the Chair of Clinical Medicine, entitled him to rank with the great Edinburgh teachers who have extended the influence of our medical school to the ends of the earth. His comprehensive knowledge made him a reliable guide through the labyrinth of medical theory and practice, while his original researches into the nature of cancerous cells and diseases of the circulation have established his fame as a pioneer in therapeutics. Two causes in particular have always found in him a powerful protagonist—the one, the open door for the medical education of women; the other, the maintenance of the independent status and the honourable traditions of his profession intact and unsullied.

Among other recipients of the same degree on this occasion were Mr. Rudyard Kipling; Dr. George Saintsbury, Professor-Emeritus of English Literature; Mrs. George Kerr, a member of the board of managers of the Edinburgh Royal Infirmary; and Miss S. E. S. Mair, who has done much for women's education in Edinburgh.

SMALL-POX IN GLASGOW.

Hopes founded upon a reduction a fortnight ago in the number of cases of small-pox in Glasgow have been falsified; sixteen new cases were admitted to the hospital on July 3rd and 4th. They came from various parts of the city, and included ten adults and six children.

Correspondence.

FUTURE PROVISION OF MEDICAL SERVICES.

A Successful Cottage Hospital.

SIR,—The fact is now pretty generally recognized that the general practitioner requiries more facilities in his work, especially in the way of institutional treatment. This has been emphasized by recent expressions of opinion by Sir Clifford Allbutt, Sir George Newman, and also by the Consultative Council under the chairmanship of Lord Dawson, which advises the Ministry of Health.

As long ago as 1909 I had the honour of addressing the Glasgow and West of Scotland Branch of the British Medical Association on this subject, and then, as now, I am strongly of opinion that the cottage hospital worked on proper lines provides the necessary facilities.

It is certain that without the assistance which an institution can give in the way of a nurse and operating room it is difficult to carry out modern asepsis, and a great deal of minor surgery, which it is both profitable and educative for a practitioner to do, must either be neglected or sent elsewhere.

It is also certain that the diagnosis of many doubtful cases of disease becomes clear after a few days of continuous observation in a hospital bed, aided by such help in examination as a hospital equipment should afford.

Some doubts have been expressed by practitioners as to the practicability of working small local hospitals, or primary centres as they are called by the Consultative Council, and it may be useful to refer to a cottage hospital here which has been in existence for over twenty-five years, and which has been successful in supplying the facilities referred to.

Situated in the chief town of an island with a resident population of about 12,000, it is used and supported by all classes of the community. It contains two wards of five beds each and three private rooms, an operating room, a small outdoor room, and an *x*-ray room. Unfortunately

there is no pathological department. It is staffed by a matron, two nurses, and two probationers. All the practitioners in the island send patients to the hospital and attend them there, making their own arrangements about the payment of fees.

The outdoor department is used only when patients are sent there by their doctor to have something done or to have some examination made, except in so far as it is used as a child welfare centre. The management is in the hands of a committee which includes all the practitioners.

The expenses of the hospital, which now amount to about £1,400 yearly, are met by income from endowment, from subscriptions, but largely from payments made either by patients or by public bodies using the hospital. The patients pay from 7s. to 21s. weekly in the ward and £2 2s. in the private rooms. A few are admitted free. The public bodies which make payments are the National Insurance Committee for Sanatorium Benefit (non-pulmonary tuberculosis), the Highlands and Islands Medical Service Board, the Education Authority, and the Ministry of Pensions for disabled soldiers and sailors. The Scottish Board of Health pays an annual sum for the use of the outdoor department as a maternity and child welfare centre, and also pays the medical men for work done there, all of them taking a share in this as in the other public service work. For the last four or five years the income has somewhat more than balanced the expenditure, and though regular charges are made for admission advantage is freely taken of the hospital, and it is one of the most popular institutions on the island.

The advantages which the community derives from such an institution are very great. Many lives have been saved by operations requiring immediate performance. Many patients are saved from going on the waiting list of a general hospital, and are enabled to have treatment carried out by a doctor of their own choice and near their home surroundings. Though there is no official relation between the cottage hospital and the general hospital as is contemplated in Lord Dawson's interim report, use is freely made of the services of consulting surgeons and physicians from the general hospitals in Glasgow.

The advantages to the local medical men are hardly less evident than those to the public. Much educative work can be done, which leads to a higher standard of practice, and naturally to more remunerative work. It may be that insured persons receive more treatment than is demanded by the regulations, but this in the long run is no disadvantage to the panel practitioner. Another advantage to the doctors is that they are all enabled to take a share in work paid for by public bodies, which in other places is often done by whole-time appointed men.

Though the doctors are on an equal footing, each doing the work he feels inclined for, some specialization has naturally occurred, and this has led to much good co-operative work.

Difficulties might have been expected to arise from the fact that about half a dozen doctors have access to the hospital simultaneously, but as a matter of fact no such difficulties have arisen.

The hospital has always been fortunate in having a good matron, which helps much in the smooth working of the place.—I am, etc.,

Rothesay, July 11th. J. N. MARSHALL.

SIR,—The importance of securing a full and fair discussion by the medical profession generally of the report of the Consultative Council must be my excuse for offering a few suggestions which may help towards this end.

1. *Objections to the Report.*—The most common criticism is that it is visionary and hopelessly unpractical from the financial side. Sir James Barr, speaking at the Annual Representative Meeting, is reported to have estimated the expenditure for the first year alone at £1,000,000, and it is assumed that this expenditure would be in addition to all the existing costs. This estimate may be regarded as a perfectly logical one if the report is taken as it stands without allowing for the possibilities of economies in the existing health services to which the nation is already committed. The fact is that the budget, as it could be drawn upon the basis of the report, is one almost entirely of new commitments, without at all clearly showing the expenditure which these would replace.

2. *Existing Communal Services.*—It would be helpful if, side by side with the maps and diagrams in the report, there could be placed a map of certain typical centres, urban and rural respectively, indicating the provision which is already made from public funds for health services. In this there would be no need to deal with the unknown problems of the future, but simply to record facts. These should take account of the following departments: Public health, education, insurance, pensions, Poor Law, and the special treatment of mental diseases, tuberculosis, venereal disease, and fevers, in addition to maternity and child welfare services, so far as these have been organized. There might thus be recorded:

(*a*) *The buildings* which are in use for preventive and curative services, for laboratories, or for any other purpose in the above departments, including administration.
(*b*) *The staff*, medical, nursing, or administrative, employed, and
(*c*) *The cost* of all of these.

When this has been done it might be useful to give as an appendix the voluntary hospital or nursing provision in the areas and the approximate cost of the same. These figures would indicate the greatness of the problem which has to be faced, which is at present, to most of us, an unknown quantity.

3. *Adaptation of these Services in the New Scheme.*—The whole crux of the situation lies in the practical distribution of the existing services in the new unified scheme of the Consultative Council. The general practitioner is told that his work is the foundation upon which the whole system primarily depends; that he is to have spacious buildings, a competent nursing staff, laboratories, *x*-ray plant, and abundant facilities for modern medical and surgical treatment. This is a tempting bait, but perhaps it is somewhat overdone, and there is little wonder if he is suspicious. He is doubtful, on the one hand, as to the part of the new services which will come into his hands, and on the other hand he greatly fears that his liberty of practice is passing away from him, and that the State medical service which he dreads is coming stealthily along in spite of the evident desire of the Consultative Council to avoid it. There is only one way to dispel these doubts, and that is absolutely plain statements on the whole situation. However difficult the problems may be they must be faced, and better sooner than later. If the profession is to consider, with much expenditure of time and money, all the issues involved, then let the case be fully put before them.

I should like to have emphasized the extreme urgency of the position, but I have already trespassed too long upon your space. Perhaps I may be permitted to add something further on another occasion.—I am, etc.,

London, E.C., July 9th. CHARLES F. HARFORD.

PUBLIC HEALTH SALARIES.

SIR,—The discussion at the Annual Representative Meeting of the British Medical Association on the question of minimum salaries for public health appointments has brought to light the existence of strong opposition in certain quarters to the legitimate demands of medical men employed by local authorities. Mr. F. J. S. Heaney's contribution to the debate should be read carefully by every member of the British Medical Association. It is a fratricidal utterance which can only do harm. The public health service has always been starved, but its growth has not been retarded in consequence. It may be that this starvation has actually stimulated its growth. The fact remains that there are at the present moment upwards of 1,000 well qualified medical persons employed who are receiving under £600 a year, and have little chance of improving their remuneration without the assistance of the 23,000 members of the British Medical Association. Of the 1,460 persons in the public health service there are probably not 300 who receive over £750 a year.

The existence of this growing army of underpaid persons is a grave danger to the medical profession, and if allowed to continue may prove before many years the undoing of the general practitioner. He would be well advised not to turn a deaf ear to the call for assistance, for the longer assistance is delayed the more difficult will it be to render efficient aid.—I am, etc.,

W. H. DAVISON.

Birmingham, July 6th.

VACCINAL CONDITION OF SMALL-POX CARRIERS.

SIR,—Dr. Kidd, in his reply to my letter, points out that unrecognized cases of small-pox may occur amongst the unvaccinated as well as amongst the vaccinated. He enumerates two different categories: (1) Those which may occur with a severe type of disease, and (2) those with a mild type; and he suggests, therefore, that even though the whole population were unvaccinated we should not entirely eliminate the unrecognized case, which under modern conditions is such a fruitful cause of the spread of small-pox.

This is true, but I do not think that it materially affects the validity of my argument that our present system of infantile vaccination tends to spread small-pox. It is only very rarely indeed that unrecognized cases occur in unvaccinated subjects when we are dealing with a severe type of the disease. The comparatively few recorded cases have generally been mistaken for purpura haemorrhagica, malignant measles, etc. The patient is always very ill, so that a doctor has to be summoned. The proper safeguard against mistakes of this kind is the adequate instruction of all medical students in the differential diagnosis of small-pox, a part of the medical curriculum which in past years was notoriously neglected.

As regards (2), unrecognized cases in the unvaccinated, of a mild type, these may be subdivided into (*a*) where a doctor is called in, and (*b*) where no doctor is called in. In (*a*) a doctor should always be able to diagnose the disease, because, even though mild, the disease is true to type and not highly modified. The proper safeguard against mistakes is again adequate education in diagnosis. In (*b*)—that is, cases which, although unvaccinated, are of such mild and trivial character that no doctor is called in—these only occur when we have to deal with an exceptionally mild strain of small-pox which causes practically no mortality or disfigurement, and is therefore of little account (for example, 1,000 cases in Australian epidemic with only one death). No particular harm is done, therefore, even if some of these cases are overlooked, because, being naturally mild, they breed true and produce only mild cases. Far otherwise is it with overlooked cases of small-pox occurring in vaccinated subjects. Such cases also may be so (apparently) mild and trivial that no doctor is consulted, but the mischief done by them is incalculably greater than by the corresponding overlooked cases in the unvaccinated. In reality these mild vaccinated cases are of a most deadly nature, because their mildness is artificial, being the result of vaccination, and they *do not breed true*. That is to say, when they pass the disease on to unprotected persons the mildness disappears and the disease reveals itself in all its true hideousness, and often with fatal results. It is useless to say that if everyone were protected by vaccination this would not matter. It is quite impossible to protect the whole community, or anything like the whole community, by infantile vaccination. The protection is far too evanescent. Indeed, even with a system of revaccination it is practically impossible to protect the whole community, as Germany has now discovered.

I submit, therefore, that to suggest, as Dr. Kidd does, that unrecognized cases of small-pox sometimes occur amongst the unvaccinated does not destroy the validity of the argument that infantile vaccination, by masking the disease, tends to favour its spread in a virulent form.

No one has a greater faith in vaccination for conferring immunity on the individual than I have, nor a more profound conviction of its immense value in helping us to fight small-pox, but, like many other good things, it should be "used fresh." Vaccination which is twenty or thirty years old is apt to be a hindrance rather than a help.—I am, etc.,

Leicester, July 3rd. C. KILLICK MILLARD.

The Services.

THE War Office will appoint for four years a Territorial officer of the rank of Major as D.A.D.M.S., East Anglian Division, with the pay and allowances of the rank. He must give his whole time to the work, and will be required to reside in Ipswich or the neighbourhood. Applications should be made to Colonel Gostling, D.S.O., A.D.M.S., the Red House, Chesterton, Cambridge.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

AT the Graduation Ceremonial, held in the M'Ewan Hall on July 8th, the following degrees were conferred:

LL.D. (*honorary*).—Emeritus Professor Francis M. Caird, Emeritus Professor William Russell.

M.D.—G. J. Adams, P. Allan, *D. C. Barron, L. D. Callander, †S. T. Champtaloup, D. Cook, †T. F. Corkill, *J. W. Edington, H. Evans, ‡G. W. M. Findlay, A. W. Forrest, H. J. C. Gibson, J. Gossip, T. P. Herriot, W. N. W. Kennedy, J. Lawson, W. A. Lethem, ‡D. M. Lyon, W. F. M'Lean, *F. G. Macnaughton, D. J. M'Rae, J. R. Menzies, G. Nicholson, ‡E. D. Pullon, A. Robertson, J. A. R. Thompson, C. B. Tudehope, *W. G. Wyllie.

D.Sc. (*Department of Public Health*).—S. T. Champtaloup.

M.B., CH.B.—H. Alexander, R. L. Baikie, P. Barlow, G. S. Barnett, R. E. Batson, C. F. Beyers, S. Borochowitz, F. G. H. Brown, K. S. Brown, H. W. Burne, R. M'D. Cairns, G. S. Calver, A. Campbell, §Helen Campbell, H. Cohen, Dorothy Court, J. B. Crolius, M. Danziger, J. Davidson, J. H. Dick, Margaret L. Dobbie, H. J. C. Durward, B. A. G. A. Edelston, §J. H. Fairweather, O. Fitzpatrick, Elizabeth S. Forbes, Dora W. Gerrard, G. M'K. Gibbon, Mary L. Gilchrist, J. A. Gillison, M. S. Goldberg, Jessie Gordon, ‖Janet Grant, A. W. P. Haine, §J. E. Haine, §A. J. C. Hamilton, S. W. Hardikar, Christina M. Hawick, J. P. Hope, J. P. Immelman, W. Isbister, W. Kantor, Eleanor H. Kelly, D. J. A. Kerr, Ba Kin, S. Levey, J. A. L. Loudon, D. I. O. Macaulay, J.F. M'Conchie, Margaret M. M'Dowall, A. G. MacGillivray, §Agnes M. Macgown, §Agnes R. Macgregor, H. MacKay, Florence E. M'Kenzie, Jean R. Maclean, J. McLeman, Jane MacLennan, §Annie S. MacLeod, Jean S. B. M'Neil, P. B. Malherbe, V. G. Massie, R. M'K. van der Merwe, §C. B F. Millar, Christine G. Mitcheson, D. J. Morrison, Emily M. Mure, A. R. Murray, D. J. T. Oswald, A. S. Paranjpé, W. P. Petrie, ‖K. M. Purves, J. C. Rabie, C. B. Reekie, Ruth J. D. Ritchie, Hera Ross, Annie M. Roxburgh, C. W. Rubidge, Louie A. Rubidge, Helen M. Russell, H. J. E. Schultz, T. Scott, C. Shapiro, G. A. Sinclair, W. A. Sinclair, P. B. Smale, Alice B. S. Smith, Dorothy M. Smith, §T. Sprunt, I. M. Thompson, H. Thomson, Mabel Thomson, Marjorie Thomson, D. L. M'R. Tod, J. C. Truter, T. C. Wakefield, Grace Walker, Edith G. Wilkes, A. A. Wilson, §J. M'L. Young, W. L. Zeeman.

B.Sc. (*Department of Public Health*).—Lieut.-Colonel T. C. Lauder, R.A.M.C.

D.P.H.—G. A. Borthwick, G. Campbell, J. Dick, G. F. P. Heathcote, Wilhelmina W. Hendry, Mary P. Hislop, A. J. Pollock, F. B. Sutherland, J. M. Tyrrell.

* Commended for thesis.
† Highly commended for thesis.
‡ Awarded Gold Medal for thesis.
§ Passed with second class honours.
‖ Passed with first-class honours.

The following prizes, scholarships, etc., were also presented:

Faculty of Medicine.—Thesis Gold Medallists: G. W. M. Findlay, D. M. Lyon, E. D. Pullon. Cameron Prize in Practical Therapeutics: Sir Robert Jones, K.B.E., C.B., F.R.C.S. Eng. and Edin., Director of Military Orthopaedics, St. Thomas's Hospital, and Consulting Orthopaedic Surgeon, Royal Infirmary, Liverpool, for the important advances he has made in orthopaedics and many valuable contributions to the literature of the subject during the past five years. Ellis Prize in Physiology: R. J. S. M'Dowall. Gunning Victoria Jubilee Prize in Materia Medica: F. G. Macnaughton. Ettles Scholarship and Leslie Gold Medal: A. W. Davison. Allan Fellowship in Clinical Medicine and Clinical Surgery: Agnes R. Macgregor. Freeland Barbour Fellowship: Helen Campbell. M'Cosh Graduate's and Medical Bursaries: D. L. M'R. Tod. Beaney Prize in Anatomy and Surgery: A. J. C. Hamilton. Mouat Scholarship in the Practice of Physic: H. W. Burne. Conan Doyle Prize: S. Levey. Annandale Gold Medal in Clinical Surgery: A. J. C. Hamilton. Buchanan Scholarship in Gynaecology: Janet Grant. James Scott Scholarship in Midwifery: D. A. Miller. Scottish Association for Medical Education of Women Prize: Janet Grant. Dorothy Gilfillan Memorial Prize: Janet Grant. Wellcome Medals in the History of Medicine: Gold Medal, A. C. White; Silver Medal, Hilda M. Davis. Pattison Prize in Clinical Surgery: J. M. Black. Wightman Prize in Clinical Medicine: T. Ferguson. Cunningham Memorial Medal and Prize in Anatomy: J. Gray. Whiteside Bruce Bursary: R. C. Burton and Margaret C. Tod, equal.

Faculty of Science.—Baxter Natural Science Scholarship: I. M. Thompson.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony on July 8th the following degrees were conferred:

M.D.—*E. W. H. Cruikshank, *H. R. Souper, J. G. Copland, J. L. Menzies.

The Straits Settlement Gold Medal for the best thesis, handed in during 1918, 1919, or 1920, for the degree of M.D. on a subject dealing with tropical medicine, was awarded to William Linton Millar, M.D. (since deceased).

M.B., CH.B.—†Gertrude H. Lendrum, ‡J. H. Mulligan, ‡Annie Anderson, Emily M. Badenoch, Isobel C. Brown, Enid Calder, Margaret W. Calder, Gertrude E. Cormack, A. A. Duffus, J. B. Duguid, J. G. Elmslie, V. L. Ferguson, G. M. Fyfe, G. M. Gray, ‡J. C. Hall, A. Hastings, Robina Inkster, H. M. Jardine, H. D. Low, †J. D. MacLaggan, ‡Annie E. Melvin, Matilda F. Menzies, ‡Marjory M. Milne, F. D. Ross-Keyt, A. McI. Smith, D. I. Walker, H. T. Wee, Hilda S. Young.

The John Murray medal and scholarship awarded to the most distinguished graduate M.B. of 1920 was presented to Y. G. Murray.

D.P.H.—A. W. H. Cheyne, E. J. Clark, G. W. Elder, T. W. E. Elliott, A. F. Fraser, G. A. C. Gordon, A. Johnstone, S. W. Lund, Maggie F. J. Moir, J. Skinner, J. L. Smith, J. H. Stephen, J. W. Stephen, W. Taylor, J. W. Tocher, B. Yule, §V. T. B. Yule.

*Honours for thesis.

†Passed Final Medical Professional Examination with much distinction.

‡Passed Final Medical Professional Examination with distinction.

§With credit.

UNIVERSITY OF ST. ANDREWS.

THE University Court has appointed Dr. David Lennox of Dundee to be Lecturer in Forensic Medicine.

The following have been approved at the examinations indicated:

THIRD M.B., B.CH.—*Materia Medica:* J. C. Anderson, A. J. Campbell, Cora C. Campbell, D. A. K. Cassells, D. C. Clark, G. R. M. Cordiner, J. Craigie, W. M. Cumming, Jean M. Davidson, Violet C. Dobbie, W. S. D. Elder, R. N. Foggie, C. R. Henderson, Mary M. Jack, W. L. Kinnear, Norah M. Lindberg, Annie T. McDonald, N. McLeod, Jeannie H. Morton, Margaret C. Muir, Janet L. A. Muirhead, R. Norrie, M.A., S. S. Ogilvie, J. E. Overstead, A. Pride, A. B. Richardson, Nora A. M. Rodger, Agnes T. H. Shepherd, Lucy C. Simpson, B. Singh, Edith M. D. Smith, Janet O. Stephen, A. K. Tateson, Frances H. Watson, T. Wilson.

Pathology: F. E. Anderson, J. C. Anderson, Cora C. Campbell, D. A. K. Cassells, D. C. Clark, G. R. M. Cordiner, J. Craigie, W. M. Cumming, Jean M. Davidson, Violet C. Dobbie, W. S. D. Elder, Ruby N. Foggie, P. G. Grant, C. R. Henderson, Mary M. Jack, W. L. Kinnear, Norah M. Lindberg, N. McLeod, Jeannie H. Morton, Margaret C. Muir, Janet L. A. Muirhead, R. Norrie, S. S. Ogilvie, A. Pride, A. B. Richardson, Nora A. M. Rodger, Agnes H. T. Shepherd, Lucy C. Simpson, B. Singh, Edith M. D. Smith, A. K. Tateson, W. Thomson, W. L. Tullis, Francis H. Watson, T. Wilson.

Medical Jurisprudence and Public Health: G. G. Buchanan, T. K. Buchanan, Katharine M. Campbell, Georgina S. Craig, D. W. Dawson, W. S. D. Elder, V. S. Ewing, H. Fisher, Phyllis Fleming, M.A., Annie A. Fulton, A. H. Harkins, L. Jacobs, Isabella D. Kilgour, Nona S. Lesslie, Katharine D. Macfarlane, Elizabeth W. MacVicar, Isobel M. Mansie, J. E. Overstead, R. S. Paton, M.A., J. D. Stewart, Christina J. Thomson, Margaret L. Tod, W. L. Tullis, Margaret H. R. Young.

FOURTH M.B., CH.B.—*Medicine:* Bessie M. Davidson, Mary Ellison, Frances L. Knipe, Margherita M. Lilley, M.A., Christian E. Little, J. B. Macdonald, G. J. Murray, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

Surgery: Bessie M. Davidson, Mary Ellison, Christian E. Little, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

Midwifery: Bessie M. Davidson, Mary Ellison, Frances L. Knipe, Margherita M. Lilley, M.A., J. B. Macdonald, W. G. Robertson, M. M. Stewart, Eleanor C. Thistlethwaite, Amelia M. Thoms, Olive M. Whyte, M.A.

SECOND D.P.H. (*Sanitary Law and Vital Statistics, and Sanitation and Epidemiology*): C. Averill, J. E. Cable, Mary L. David, T. Montgomery, A. G. Reekie, G. R. Tudhope, W. A. Young.

UNIVERSITY OF CAMBRIDGE.

DR. SHILLINGTON SCALES has been appointed University Lecturer in Medical Radiology and Electrology.

UNIVERSITY OF MANCHESTER.

THE following have been approved at the examinations indicated:

M.D.—F. A. Bearn, S. L. Heald, N. T. K. Jordan, H. Sheldon, J. F. Ward.

FINAL M.B., CH.B.—N. Abddh, K. V. Deakin, Georgiana M. Duthie, *‡F. R. Ferguson, Evelyn A. Garnett, F. G. Hamnett, J. Harris, Sylvia K. Hickson, E. Jones, F. C. Jones, J. N. Laing, H. A. Lomax, *†§W. E. Mason, Doris B. Norman, Emily M. Peach, G. Sheehan, Constance Snowdon, Annie E. Somerford, ‡G. L. Taylor, Mary I. Turner, F. A. van Coller, J. B. Wright.

Medicine and Obstetrics.—May Blakiston, J. W. Crawshaw, A. M. El-Aguizy, H. Tomlinson.

Surgery.—F. H. Anderson, P. Fildes.

Medicine.—Irma M. C. Jehansart.

Obstetrics.—H. W. Taylor.

Forensic Medicine and Toxicology.—‖G. V. Ashcroft, E. C. Berg, ‖Nancy E. Bleakley, Muriel Coope, T. E. Coope, Eugenia R. A. Cooper, S. W. Drinkwater, Winifred M. Edghill, T. N. Fisher, Kathleen M. Fullerton, E. Gleaves, Florence M. A. Graham, W. H. Gratrix, A. Haworth, Ruth Hill, C. D. Hough, ‖Violet M. Jewson, Marguerite F. Johnstone, Jessie Kilroe, A. W. Kirkham, R. R. Lane, J. Leather, G. H. Lees, Eva G. Le Messurier, W. L. Martland, P. B. Mumford, T. O'Brien, L. S. Potter, W. E. Powell, Margaret Pownall, Bertha Renshaw, H. L. Sheehan, Florence G. Sherry, Margaret Single, J. W. Smith, H. Stafford, Doris A. Taylor, S. N. Taylor, Norah M. Walker, S. Wand, S. Waterworth, R. Williamson, J. R. Wright.

Awarded distinction in * Obstetrics, † Medicine, ‡ Surgery, ‖ Forensic Medicine and Toxicology, § First Class Honours.

THIRD M.B., CH.B. (*Pharmacology, Therapeutics, and Hygiene*): P. D. Abbatt, R. Anderton, J. H. Appleton, Mary W. Atkinson, Elsie C. Begg, J. B. Bennett, Doris H. Bentham, B. Broman, G. H. Buckley, V. Chadwick, E. W. Clough, H. M. Coope, N. S. Craig, O. M. Duthie, Kathleen M. Eastwood, Beatrice L. Ellison, H. E. Emmett, Caroline M. Edwards-Evans, J. H. Fletcher, W. Geraghty, Doris M. Hardman, A. Ingham, E. L. Jones, Mary Kent, G. L. Meachim, Nora Mills, Winifred H. Mitchell, A. C. Newman, A. A. Pomfret, Hilda Pratt, G. T. Robinson, A. Rosenstone, R. Salib, Eleanor P. Smith, H. Southworth, G. B. Stenhouse, J. H. Struthers, L. Unsworth, Emmeline Wade, C. B. V. Walker, Margaret Wild, S. J. Woodall, J. Worthington, J. Yates. (*Hygiene*): Margaret Derbyshire, Gwendolen A. G. Edwards-Evans, F. W. W. Fox, C. B. Kirkbride, G. A. Lord, Dorothea A. C. Partington, Margaret J. Warburton.

UNIVERSITY OF SHEFFIELD.

THE degree of Ch.M. (*ex officio*) has been conferred upon Percival Ellison Barber, Professor of Midwifery, and Arthur Mayers Connell, Professor of Surgery, in the University of Sheffield.

The following candidates have been approved at the examinations indicated:

M.D.—Lydia M. Henry, L. Samuels.

FINAL M.B., CH.B.—Constance M. Chappell.

UNIVERSITY OF LIVERPOOL.

THE following have been approved at the examinations indicated:

M.D.—G. H. Darlington, P. E. Gorst, Mary E. Illingworth, Phoebe A. Ince, S. D. McAusland, F. C. Plummer, H. G. Roberts, J. P. Roberts, R. E. Roberts, M. B. Strock, W. R. Williams.

M.B. AND CH.B., CLASS I.—W. J. Birchall, with distinction in obstetrics and medicine.

PART III.—*Medicine, Surgery, and Midwifery:* Esther Ashworth, Evelyn F. Bebbington, G. N. Campey, J. Flanagan, R. O. Jones, T. M. Jones, D. M. Mather, Annie A. Muir, G. H. Potter, Edith M. Seward, Marguerite G. Sheldon, Nellie Wall, D. O. Williams.

PART I.—*Pathology:* J. L. Armour, A. V. Campbell, C. H. R. Carmichael, E. N. Chamberlain, Florence M. E. Davies, Helen M. Duvall, F. H. Edwards, M. H. Finegan, W. M. Frazer, P. R. Hawe (with distinction), A. R. Jones, R. M. Jones, C. L. Kopeland, Beatrice M. Niven, C. Voigt.

PART II.—*Forensic Medicine and Toxicology and Public Health:* O. A. Akjaly, F. H. Alexander, *†G. P. F. Allen, *†J. L. Armour, *†J. R. Bhatia, J. S. Bradshaw, †Doris Brown, †W. E. A. Burton, †Doris M. Cassady, †Mildred M. Clegg, *R. W. Cowie, †A. C. Crawford, †Gladys W. Darlington, †I. S. Fox, †W. M. Frazer, †G. L. Gately, W. S. Gilmour, J. Goldberg, *†S. B. Herd, G. M. Hughes, Isabel E. Imison, E. W. Johnson, Isobel K. Johnstone, *R. J. Jones, Irene E. Kenworthy, A. Livingston, F. Q. McKeown, H. R. Madan, †R. F. J. Martin, †J. H. Moorhouse, M. Newman, †J. B. Oldham, †G. W. Phillips, †Kathleen M. Platt, J. H. Pottinger, †A. McK. Reid, J. K. Reid, †T. R. Roberton, Gladys Rutherford, C. F. H. Sergeant, F. C. H. Sergeant, S. G. Sheir, *†S. S. Shrikanth, W. T. de V. Thomson, *L. F. Unsworth, *†S. V. Unsworth, †C. A. Wells, *†T. A. Williams.

* Distinction in forensic medicine and toxicology.
† Distinction in public health.

D.P.H.—F. A. Belam, J. Cullen, Constance M. Edwards, A. V. Glendenning, H. Middleton, S. R. Richardson, R. Rimmer, A. A. Turner, J. Walker.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B.—PART II (Completing Examination): T. H. A. Pinniger. PART I (only): W. H. Royal.

D.P.H.—C. H. Hart, S. H. Kingston, A. D. Symons. PART I (only): F. V. Cant, A. D. Fraser.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY council was held on July 8th, when Sir George Makins, President, was in the chair.

Special Primary Examination for the Fellowship.

The following regulation was passed: That on account of the delay which has occurred in the demobilization of officers in the army in the East (India, Persia, Mesopotamia, etc.), an additional first professional examination for the Fellowship under war conditions be held in May next, and that it be definitely stated that such examination is to be the last held under special war conditions. The committee will only consider applications for admission to the examination from those who have been prevented from returning to this country by reason of the exigencies of services in the East.

Dental Examiners.

A vacancy occasioned by the retirement of Sir Frank Colyer will be filled at the meeting of the council on July 29th.

Election of Professors and Lecturers.

Hunterian Professors.

Arthur Keith: The principles of craniology applied to clinical and racial problems (six lectures).

W. Sampson Handley: The pathology and treatment of lupus.

W. G. Howarth: Mucocele and pyocele of the nasal accessory sinuses.

C. W. Gordon Bryan: Injuries of the diaphragm, with special reference to wounds involving both thoracic and abdominal viscera.

Harry Platt: The surgery of the peripheral nerve injuries of warfare (two lectures).

A. G. Timbrell Fisher: Loose bodies in joints.

Arris and Gale Lecturers.

F. W. Edridge-Green: The cause and prevention of myopia.

J. Faulkner Dobson: The function of the kidneys in enlargement of the prostate gland.

J. Howell Evans: The azygos system of veins in their association with surgical affections.

Erasmus Wilson Lecturer.

S. G. Shattock: Six demonstrations on pathological specimens in the museum.

Arnott Demonstrator.

Arthur Keith: Six demonstrations on the contents of the museum.

Thomas Vicary Lecturer.

Sir D'Arcy Power: The education of a surgeon under Thomas Vicary.

Election of President and Vice-Presidents.

Sir Anthony A. Bowlby was elected President, and Sir Charles Ballance and Sir John Bland-Sutton Vice-Presidents.

The next ordinary meeting of the Council will be held on Thursday, July 29th.

Obituary.

MONTAGU HANDFIELD-JONES, M.D.Lond., F.R.C.P.,

Consulting Obstetric Surgeon to St. Mary's Hospital.

We announced last week the death on July 2nd, from heart failure following a long illness, of Dr. Charles Montagu Handfield-Jones, the well-known obstetrician and teacher. He was the elder son of the late Dr. Charles Handfield-Jones, F.R.S., and was born on May 12th, 1855. His father was for nearly forty years physician to St. Mary's Hospital, Paddington, and had a considerable reputation in his day, both as a clinician and for his original studies in histology. Both sons entered the medical profession, and the younger, Dr. C. R. Handfield-Jones, formerly physician to the Warneford Hospital, Leamington, is now in practice in the Isle of Wight.

Montagu Handfield-Jones, like his father, was educated at Rugby and at St. Mary's Hospital, where he gained a scholarship in natural science and an entrance exhibition, and had a distinguished student career. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1879, and graduated M.B. of the University of London with honours in obstetric medicine in 1883, in which year he obtained also the M.R.C.P. diploma. In 1886 he proceeded to the M.D. degree, and in 1900 was elected a Fellow of the Royal College of Physicians of London. Dr. Handfield-Jones was for many years lecturer on midwifery and diseases of women at St. Mary's Hospital Medical School, and obstetric surgeon to the hospital. He had been assistant physician to the Chelsea Hospital for Women, and was surgeon to in-patients at the British Lying-in Hospital and consulting obstetric surgeon to the Paddington Dispensary. In 1893 he was appointed an examiner in midwifery to the English Conjoint Board, and in later years he served as examiner in midwifery and diseases of women in the Universities of Cambridge and London, and in the Victoria University of Manchester. He was a past President of the Obstetrical Section of the Royal Society of Medicine and of the Harveian Society of London. In 1895 Dr. Handfield-Jones delivered the Harveian Lectures on the heart in its relation to pregnancy, parturition, and the puerperal state, and he was chosen to contribute the article on the development of modern gynaecology to Allbutt and Playfair's *System of Gynaecology*. Beyond these works he made a considerable number of contributions to the literature of gynaecology and obstetrics, which appeared in this and other medical journals or in the *Transactions* of the Obstetrical Society and of the Medical Society of London.

Thirty years ago, in an introductory address to the students of St. Mary's Hospital, Dr. Handfield-Jones revealed much of his own character and outlook on life. His subject was individualism in its relation to medicine, and he described this quality as the religion and master-principle of the strong man. He insisted that the great enemy of individualism was mental laziness. The gist of his message was that in medical education the aim should be above all to teach the student to think for himself, to believe in his own powers of observation, and to rely upon his own judgement; for the profession of medicine, he held, would rise or fall in the eyes of the world according to the character and attainments of its component members.

Dr. Andrew Mitchell, who was an outstanding figure among the general practitioners in the north of Scotland, died on May 26th. He was born at Afleck, Aberdeenshire, in 1849, and was educated at the Old Grammar School, Aberdeen, and graduated M.B., C.M. at Aberdeen University in 1872. After holding the appointments of house-surgeon and house-physician at Dundee Infirmary, he succeeded Dr. Leslie in practice at New Deer, Aberdeenshire, where he skilfully and faithfully administered to rich and poor alike for forty-six years. Dr. Mitchell retired on account of ill health brought on through overwork during the influenza epidemic of 1918, and never recovered his strength. He was post office and police medical officer for the district, as well as public vaccinator and Poor Law officer. He was a very keen volunteer during his early days, and was commissioned as surgeon-captain in 1875 to the 3rd Volunteer Battalion Gordon Highlanders. He retired with the rank of colonel in 1908. He received the V.D. for his services. He was a very familiar figure among the sportsmen of the district, being a keen horseman and enthusiastic shot. His unfailing good humour and interesting conversation made him very popular, and his sympathetic nature was appreciated by all. He is survived by a widow and two sons, the elder of whom served for two years during the war in East Africa as captain in the R.A.M.C.

Medical News.

The Sir Alfred Jones laboratories of the Liverpool School of Tropical Medicine will be opened by Lord Leverhulme on Saturday, July 24th. The ceremony will take place at 3 p.m., and afterwards the Mary Kingsley memorial medals will be presented.

The annual general meeting of the British Pharmaceutical Conference will be held at Liverpool from July 19th to 23rd.

Mansfield House University Settlement, of thirty years' standing, is open to receive as residents men who are interested in and prepared to devote time to social studies and activities. An interesting programme lies before the Settlement in the coming autumn and winter. The Warden, Mansfield House, 89, Barking Road, Canning Town, E.16, will be glad to answer any inquiries.

Dr. John Frederick Williams has been awarded the medal of the Order of the British Empire for "courage and devotion to duty on the occasion of an air raid in rescuing persons who had been buried in a cellar of a burning building."

The offices of the Board of Education are about to be removed from the Victoria and Albert Museum to the premises formerly occupied in King Charles's Street, Whitehall. The Medical Branch will remain at Cleveland House, 19, St. James's Square, S.W.1.

At the statutory meeting on June 21st the University of Ottawa conferred the degree of Doctor of Literature on Captain J. C. McWalter, M.D., LL.D., High Sheriff of Dublin, and President of the Dublin Branch of the British Medical Association.

The fifty-seventh annual general meeting of the British Pharmaceutical Conference will be held at Liverpool from July 19th to 23rd under the presidency of Mr. C. A. Hill, B.Sc., who will deliver his presidential address, on progress in science and pharmacy, on Tuesday, July 20th.

Miss Marian Scott Riddell, R.R.C., has been appointed Registrar of the General Nursing Council established under the Nurses' Registration Act, 1919. She was trained at St. Bartholomew's Hospital, and before the war was Matron of the Chelsea Hospital for Women. During the war she served as Matron of the 2nd London General Hospital, and subsequently of the 53rd General Hospital in France, until she was appointed Principal Matron and afterwards Acting Matron in Chief of the Territorial Force Nursing Service.

The value of chaulmoogra oil in leprosy is well recognized, and various preparations have been made from it in the hope of obtaining one of greater efficacy than the crude oil. Thus several varieties of sodium chaulmoograte have been prepared, and have been used with advantage in India on the advice of Sir Leonard Rogers and others. The United States Public Health Service now announce that an ethyl ester prepared from chaulmoogra oil by Professor L. E. Dean, head of the chemical department of the College of Hawaii, has given very satisfactory results; forty-eight lepers treated with this preparation who were liberated on parole in October, 1919, have since remained free from the disease.

The third Italian Congress of Medical Radiology will be held in Rome on October 28th, 29th, and 30th, under the presidency of Professor Francesco Ghilarducci, who will deliver an opening address. The chief subjects for discussion will be radio-activity in biology and clinical medicine, the radiological examination of the heart and great vessels, and the radio-therapy of cancer. Those who intend to take part in the congress should communicate not later than October 1st with the secretaries of the congress at the R. Istituto di Elettroterapia e Radiologia Medica, Policlinico Umberto I, Rome.

Out of 156 clinical thermometers borrowed from doctors and nurses and tested by the Sanitary Bureau of New York City, 84, or 54 per cent., were found to be grossly inaccurate. Legislative action is contemplated.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

I. asks as to certain expenses incurred by him in the course of his professional work as a medical inspector under the Workmen's Compensation Act.

*** The basis of the return is not stated, but the cost of hiring a car for professional journeys is certainly allowable; Since I. purchased a car these expenses have been replaced by the cost of running his own car, but no portion of the outlay on the purchase can be treated as an expense for income tax purposes. If and when I.'s brother acts as his chauffeur, he can deduct the cost, whether incurred in cash payment or by way of providing board and lodging, provided that the amount does not exceed what would be paid to a chauffeur who was not a relative. The sum mentioned appears reasonable. It is, however, perhaps worth emphasizing that if the basis of the declaration as regards receipts is the previous year or three years, the expenses deducted must be calculated on the same basis.

PAROXYSMAL SNEEZING AND COUGH.

A. R. asks for advice in the treatment of the following case:—A man, aged 74, who left Mauritius eighteen years ago, after residing there for thirty-five years, has for thirty years suffered from sudden attacks of coryza and sneezing if he sits in a draught or gets wet. The attacks have become more violent, and are attended by a spasmodic cough, which is not relieved by the ordinary sedatives. An autogenous vaccine has been prepared and twenty injections given without result. He had malaria at one time, and now the only treatment that does any good is fifteen grains of quinine.

LETTERS, NOTES, ETC.

STERILE CATGUT.

THE London Hospital, which is frequently surprising us by new departures, announces that, as it is as easy to make large quantities of sterilized catgut as small, it has been decided to sell the surplus manufactured in its catgut department to other hospitals and to private surgeons. Messrs. Allen and Hanburys have undertaken to arrange for the sales.

THE LATE DR. A. P. SPELMAN.

IN our issue of May 15th, 1920, p. 689, we published an appeal on behalf of the widow and children of the late Dr. A. P. Spelman, of Dunmore, co. Galway, who, when only 26 years of age, was killed by the overturning of his motor car on his return from a visit to a patient. Dr. T. A. Heneghan, who acted as treasurer of the fund, has now furnished us with the following complete list of subscriptions received in response to the appeal:

	£	s.	d.
Dr. McArdle, Dublin ...	10	10	0
Dr. Burgess, Manchester	10	10	0
Dr. Meade, Dublin ...	10	10	0
Dr. Meenan, Dublin ...	5	5	0
Sir W. de Courcy Wheeler, F.R.C.S., Dublin ...	5	5	0
Dr. V. Tighe, Dublin ...	5	5	0
Dr. E. R. Kinsey, Derby	5	5	0
Dr. McLaverty, Dublin	5	5	0
Dr. Mooney, Dublin ...	5	5	0
Dr. P. J. Delaney, Claremorris	5	5	0
Dr. T. A. Heneghan, Ballindine	5	5	0
Dr. McMichael, Tullamore	5	0	0
Dr. Kane, Lisheen, Doncaster	5	0	0
Dr. Melville, Basingstoke	5	0	0
Dr. Phelan, Callan ...	5	0	0
Captain Richardson, R.A.M.C.	5	0	0
Dr. Cassidy, Lisnaskea	5	0	0
Dr. Law, Coleraine ...	5	0	0
Dr. Mahon, Galway ...	3	3	0
Dr. McGuinness, Dublin	3	3	0
Dr. Morris, Galway ...	3	3	0
Dr. Flannery, Hollymount	3	3	0
Dr Rendall, Nottingham	3	3	0
Dr. P. J. Keneally, Tralee	3	3	0
Dr. J. MacDonagh, Galway	3	0	0
Dr. Kennedy, Dublin ...	3	0	0
Dr. McKinney, Dublin ...	2	10	0
Dr. O'Hea, Dublin ...	2	2	0
Dr. Welsh, Westport ...	2	2	0
Dr. O'Carroll, Dublin ...	2	2	0
Dr. Gray, Ballinasloe ...	2	2	0
Dr. Ronayne, Manchester	2	2	0
Dr. Mangan, Carna ...	2	2	0
Dr. Dargin, Dublin ...	2	2	0
Dr. McNulty, Killala ...	2	2	0
Dr. Martin, Clifton ...	2	2	0
Dr. Elliott, Cookstown ...	2	2	0
Dr. Peck, Hastings ...	2	2	0
Dr. Solomons, Dublin ...	2	2	0
Dr. MacLeod, Evesham	2	2	0
Dr. Purcell, Blessington	2	2	0
Dr. Brennan, Blackrock	2	2	0
Dr. Lagan, Omagh ...	2	2	0
Dr. Redmond Keating, Tralee	2	2	0
Dr. Keogh, Dublin ...	2	2	0
Dr. Kelly, Roscommon	2	2	0
Dr. Gilmour, Dublin ...	2	2	0
Dr. Ryan, M.P., Wexford	2	2	0
Right Hon. M. F. Cox, Dublin	2	2	0
Dr. Doolin, Dublin ...	2	2	0
Dr. Lockhart Stephens, C.B.E., D.L., Emsworth	2	2	0
Dr. FitzGerald, Hollymount	2	2	0
Dr. McDonnell, Vicker's Croft	2	2	0
Dr. Flannery, Tubbercurry	2	2	0
Dr. Doyle, Gurteen ...	2	2	0
Dr. Ryan, Clondalkin ...	2	2	0
Dr. Florence Stoney, Bournemouth	2	2	0
Dr. Clarke, Loughlin ...	2	0	0
Dr. McEniry, Ballymacarbery	2	0	0
Dr. G. McGuire, Claremorris	2	0	0
Dr. Pollard, Bristol ...	2	0	0
Captain C. S. Hamilton, R.A.M.C., Exeter ...	2	0	0
Dr. Forde, Castlerea ...	2	0	0
Dr. Wilson, Tunbridge Wells	2	0	0
Dr. Bride Martyn, Middlesbrough	2	0	0
Dr. Cooney, Lusk... ...	2	0	0
Dr. McNamara, Corofin...	2	0	0
Col. McNamara, Corofin	2	0	0
Dr. Knott, Castlebar ...	1	1	0
Dr. Stokes, Fethard ...	1	1	0
Dr. Wilson, Dublin ...	1	1	0
Dr. M. Ryan, Dublin ...	1	1	0
Dr. Barniville, Dublin ...	1	1	0
Dr. Keane, Ennistymon	1	1	0
Dr. Broderick, Cahinteely	1	1	0
Dr. Hawkshaw, Ballinrobe...	1	1	0
Dr. Alfred Cox, London	1	1	0
Dr. Pope, Hereford ...	1	1	0
Dr. E. Minceliens, London	1	1	0
Dr. Burke, London ...	1	1	0
Dr. Hawkins, Avonmouth	1	1	0
Dr. Whiteside, Tamworth	1	1	0
Dr. McNeill, Pitlochry ...	1	1	0
Dr. Beirne, Charlestown	1	1	0
Dr Corboy, Fort Prospect	1	1	0
Dr. Thompson, Tuam ...	1	1	0
Dr. Barry, Philipstown	1	1	0
Dr. Staunton, Swinford	1	1	0
Dr. Mills, Ballinasloe ...	1	1	0
Dr. Casey, Clifden ...	1	1	0
Dr. Sandys, Cork ...	1	1	0
Dr. Brown, Edinburgh ...	1	1	0
Dr. Ffennell, Southbourne	1	1	0
Dr. Ryan, Glenlara ...	1	1	0
Dr. Campbell, Galway ...	1	1	0
Dr. Murphy, Cork ...	1	1	0
Dr. Ryan, London ...	1	1	0
Dr. Shepherd, London ...	1	1	0
Dr. O'Gorman, Gourran...	1	1	0
Dr. Duncan Scott, Cambridge	1	1	0
Dr. Dudley, Stourbridge	1	1	0
Dr. Johnstone, Edinburgh	1	1	0
Dr. Berry, Burnham ...	1	1	0
Dr. Blight, Cardiff ...	1	1	0
Dr. McMillan, Glasgow...	1	1	0
Dr. King, Dalkey	1	1	0
Mr. Frank Healy, Claremorris	1	1	0
Mr. Edward Fitzgerald, Ballinrobe	1	1	0
Dr. Charlotte Warner, Newcastle, co. Down ...	1	1	0
Dr. Branford Morgan, Norwich	1	1	0
Dr. Rossiter, Ballinasloe	1	1	0
Dr. Waters, Canbury ...	1	1	0
Dr. O'Brien, Dublin ...	1	1	0
Dr. Evelyn Fisher, Port Talbot	1	0	0
Dr. M. McDonagh, Galway...	1	0	0
Dr. Orton, Coventry ...	1	0	0
Dr. MacHenry, Galway	1	0	0
Anon....	1	0	0
Dr. Crean, Ballyhaunis	1	0	0
Dr. McBride, Castlebar	1	0	0
Dr. Madden, Kiltinagh...	1	0	0
Dr. Scanlon, London ...	1	0	0
Dr. Dickson, Lochgelly	1	0	0
Dr. M. Lee, Newport ...	1	0	0
Dr. Crowley, Loughrea...	1	0	0
A Friend, per P. J. Keneally, Tralee ...	1	0	0
Dr. O'Sullivan, Crookstown	1	0	0
Dr. Mark Love, Stroud ...	1	0	0
Dr. Hollis, Hove	0	10	0
Dr. O'Malley, Cork ...	0	10	0
Sir Jenner Verrall, Bath	0	10	0
Anon.	0	7	6

A CORRECTION.

IN the account of the meeting of the Section of Electro-Therapeutics at the British Medical Association meeting, appearing in last week's JOURNAL, Dr. C. Worster-Drought was mentioned as describing experiences with condenser tests in nerve injuries while "acting as a military *radiologist*"; this, of course, was a misprint for *neurologist*.

NICE DISCRIMINATION.

WE are indebted to Mr. J. S. Lewis for quoting in the *Welsh Outlook* from a play, described as a comedy of Welsh life during the war, a pretty compliment to the medical profession, which is delightful by reason of its unconscious humour. It is contained in the following stage direction: "If the actor playing the part of the doctor has a strong dignified personality and powerful voice, the description 'physician and friend' can stand, otherwise he should be referred to as 'herbalist.'"

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36, 37, and 38.

THE following appointments of certifying factory surgeons are vacant: Bishop's Waltham (Hants), Bothwell (Lanark).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.